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CY NO. 10 OF 25 CYS. SERIES A

A

UNITED STATES ATOMIC ENERGY COMMISSION

Department of Energy Declassification Review	
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AU-80 Reviewer: <u>NFB</u>	1. Classification Retained
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Derived From:	3. Contains No DOE Classified Info
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AU-80 Reviewer: <u>J. P. ...</u>	6. Classified Info Bracketed
Authority: DD	7. Other (Specify):

In the Matter of

J. ROBERT OPPENHEIMER

~~RESTRICTED DATA~~

TRANSCRIPT OF HEARING

Before

PERSONNEL SECURITY BOARD

Washington, D.C.

April 12, 1954, through May 6, 1954

INFORMATION & PUBLICATIONS

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IN UNCLASSIFIED COPY PRINTED BY U.S.
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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., April 12, 1954

The above-entitled matter came on for hearing before the board, pursuant to notice, at 10 a.m.

Personnel Security Board: Dr. Gordon Gray, chairman; Dr. Ward V. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer.

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Page and Line No. <u>U.S. GPO Copy; 1954</u>	<u>Remarks</u>	<u>Page No.</u> <u>Classified</u> <u>Copy</u>
39 4th from bottom	After the words <u>I like this</u> , add: "This is the kind of test we should be putting to the Russians."	130
46 10th from top	After the words <u>I have in mind two examples</u> , add: "One, toward the <u>end of 1950 and the beginning of 1951</u> , on the operational readiness for tactical use of atomic weapons."	152
46 17th from top	After the words <u>in it -- comes to mind</u> , add: "and that was trying to be sure that there was an interim capability in the field of hydrogen weapons, of thermonuclear weapons, at a time after the 1952 tests and before the current series of tests when it seemed important that having announced this thing throughout the world, we have something to back it up."	153

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022,
Washington, D.C., April 13, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward V. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen B. Ecker, counsel for J. Robert Oppenheimer.

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62
12th from bottom

Delete the words (Classified transcript deleted¹)
and insert: "BY MR. ROBB:

199-201 *wp II a*

"Q. Doctor, I have before me a photostat from the report of December 29, 1950.

"A. I say that is undoubtedly the report.

"Q. Entitled, 'Military Objectives in the Use of Atomic Energy.' Was that your report?

"A. That is right. I would expect that to be the title.

"Q. Submitted to the Atomic Energy Committee of the Research and Development Board of the Department of Defense.

"A. Yes.

"Q. I will read all the excerpt paragraphs I have here:

"'1. Victory in a general war in the near future is likely to depend on bringing to bear in all aspects of our military operations the maximum application of atomic weapons.'

"'3. The most urgent requirements for research and development lie in the field of fission weapons.'

"'12. Intensive study of thermonuclear warheads as has been established that they are more uncertain and much more difficult of development and if achievable, much more costly in nuclear materials than were thought a year ago.

'13. The determination of the feasibility of thermonuclear weapons is an important but very definitely long range undertaking (more than five years.')

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"This has been extracted for security reasons.

"'14. Only a timely recognition of the long range character of the thermonuclear program will tend to make available for the basic studies of the fission weapon program the resources of the Los Alamos laboratory.'

"Does that refresh your recollection as to your report?

"A. I have no doubt that is there. Those statements would have such a small impinging on my memory that I still don't remember any discussions about it. In the first place, the whole background of this, and my expertness and contribution were the things that I knew as the technical leader of Sandia. As of that time, the thermonuclear had not reached the Sandia discussion stage at all. That is a long report, and that must be a relatively small part. Any statement about the status of the thermonuclear I would have had to rely on others there that were in that. I haven't the time and don't attempt to get over into things that don't reach my cognizance. I knew the general situation and knew the discussions in the advisory committee, and so on, but I had really not put my mind to the thermonuclear problem. It did not reach Sandia until quite a bit later.

"Q. Dr. Kelly, upon whom would you have had to rely with respect to the thermonuclear?

"A. The people who would know, as nuclear physicists that were there would be Bacher, Alvarez, and Dr. Oppenheimer. I think all the rest of us would -- probably Lauritsen to a little less extent -- but all the rest of us would have been dependent upon the judgment, and the judgments of Bacher, Alvarez,

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and Oppenheimer I would certainly have respected in that area. But I don't remember that part of the deliberations at all. It is blank in my mind. If they were in the committee, I don't remember them.

"Q. Did you know Bacher and Alvarez at that time?

"A. Yes, very well.

"Q. You have already said, if I recall, that Dr. Oppenheimer was pre-eminent in this field.

"A. That is right."

75
20th from bottom

After the words General Nelson or Mr. Northrop, add: "They were involved in the detection net for Soviet atomic explosions or anyway for foreign atomic explosions, and they said that they had something very important."

246

75
6th from bottom

After the words, This was an atomic bomb, add: "or at least it could well have been, and there was no reason to doubt that it was a good one."

247

75
4th from bottom

After the words, it would come so soon., add: "That was the prevailing opinion. In every meeting of the General Advisory Committee nearly we had a briefing on what was called atomic intelligence. It is common knowledge that prior to the Soviet explosion, the earliest possible date was considerably later than the actual explosion and the probable date quite a lot later. The fact is we didn't know what was going on. So this came as an immense shock, and to everyone involved clearly meant some re-thinking of many aspects of United States policy."

247 & 248

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77 19th from top	After the words, <u>a number of people</u> . Add: "We had in the intelligence people, I ought to say that never during my chairmanship of the GAC, never at any time when I had access to it, did I learn of any intelligence that the Russians were working on hydrogen weapons. It may have been true, but there was no evidence. We always pressed the officers to find out."	252
79 30th from top	After the words, <u>producing the weapon</u> , add: "within five years"	260 <i>Page 258-260 adding to classified</i>
80 26th & 27th from top	After the words, <u>important contribution</u> , add: "from Ulam and"	263 <i>See Vol II B</i>
80 27th from top	After the words, <u>other people</u> , add: "such as Nordheim."	263
83 26th from top	After the words, <u>some inventions made.</u> , add: "They were not discoveries, really; they were inventions, new ideas."	274
83 27th from top	After the words, <u>bound to succeed.</u> , add: "It might not succeed at first shot; you might make mistakes, but for the first time it was solid. It was not on the end; it wasn't so that every time you calculated it it was yes or no, but it came out that you knew that you could do not. It was just a question of how rapidly and how well and I am amazed at the speed at which this actually went after we learned what to do. Ulam and Teller had some very bright ideas."	274
84 28th from top	After the words, <u>that some materials</u> , add: "that had not hitherto prominent, although they had been mentioned,"	278

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Page and Line No. <u>U.S. GPO Copy; 1954</u>	<u>Remarks</u>	Page No. <u>Classified</u> <u>Copy</u>
86 20th from bottom	After the words, <u>better than I do.</u> , add(new paragraph): "It was quite a fine thing and we all thought it was right, but it was the outbreak of the war in Korea that made it possible to do something about it."	286
86 4th from bottom	After the words, <u>on which I served.</u> , add: "I think the last meeting I attended on the Committee on Atomic Energy just before the Board was dissolved and things organized, we were asked to help find some way of getting very rapidly an emergency capability based on the 1952 test. We did so do. I don't mean that we were the only people that did this. We did relatively little, but that I do remember."	287
94 9th from bottom	After the words, <u>subject of my expertness.</u> , add: "The emphasis in the discussions I attended and the final briefings were the moving of the early far north -- supplementing the early warning by a far northern line, the extension of the early warning by seaward flanks."	315
94 8th from bottom	After the words, <u>argument about interception</u> , add: "and what kind of <u>missiles</u> could be used. Whether one could use atomic weapons for that purpose."	315
94 3rd from bottom	After the words, <u>severity of the attack</u> , add: "by going after enemy bases."	315

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., April 14, 1954

The above entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward V. Evans, member; Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board.

J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen A. Ecker, counsel for J. Robert Oppenheimer.

Herbert S. Marks, co-counsel for J. Robert Oppenheimer. (Present for p.m. session only.)

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No classified deletions made.

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., April 15, 1954

The above entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward V. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen B. Ecker, counsel for J. Robert Oppenheimer, and Herbert S. Marks, co-counsel for J. Robert Oppenheimer.

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164 18th from top	Directly after the words, <u>did not explode</u> , add: "Various people, particularly those vitally concerned with the electromagnetic process, felt that a percentage of somewhere around 20 percent to 14 percent would be explosive. "They were greatly influenced by the fact that they thought that their process, as they had it developed, would produce material of that purity."	527 & 528
164 19th from top	After the words, <u>I felt</u> , add: "that was not sound, and"	528
164 19th from top	After the words, <u>to have a</u> , add: "much"	528
164 19th from top	After and as part of the word <u>high</u> , add: the syllable "er"	528
164 4th from bottom	After the words, <u>were not sound</u> , add: "and to put it bluntly, that they were just plain faked,"	530
167 2nd from top	After the words <u>break down compartmentalization</u> . add (new paragraph): "The Greenglass and Rosenberg case, which I always felt the effects were greatly exaggerated, that the Russians did not get too much information out of it, that case according to the testimony of this sergeant would never have been possible if the junior scientific personnel at Los Alamos had observed the rules and regulations."	537

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174
3rd from bottom

After the words, which was legitimate. add:
"It went from Chicago to Montreal which was
not legitimate. It went from Montreal to some-
one else in Canada, and from that it went to
New York. I didn't have to have that diagram."

565

175
24th from top

After the words, about this Canadian affair. add:
"I was told of it by Dr. Chadwick, the British
scientific representative. I should have been
told by our top officials whoever got the first
word from Canada. I should have been told. I was
not consulted about it in any way.

567
&
568

"I think that led probably to the damage of Fuchs,
that Fuchs did. Of course, the Fuchs case to me
was a very bitter affair, because the British
Government deliberately lied about Fuchs. I said
that with emphasis to the fullest. Not only did
they lie once, they lied three times in writing.
I first asked for this group of which Fuchs was
a member, have they been cleared? The answer
was yes, they have been cleared. They are per-
fectly sound..

"I said that is not satisfactory. I have to have
more than that. They came back then with a letter
that said these men had been Q cleared by our in-
vestigative agencies over in England. I think
they call it, what is it, G-5, or something of
that kind. In other words, a combination of mili-
tary intelligence and the FBI. I refused to ac-
cept that.

"Then they came through and said that these men,
and they named them, including Fuchs, have all
been cleared on the same standards which you would
use in this country for men who were going to know
the same things. They brought up at that time or
shortly thereafter or shortly before that some of
the men coming over were of German birth, that they

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were not English citizens, that some of them had been made English citizens by act of Parliament. Frisch was related to Lisa Meitner or was at least a nephew of Peierls and Sir John Simon, either were not British citizens or were made British citizens by act of Parliament.

"In other words, they had not fulfilled the usual requirements. Never did they mention that Fuchs was German born or was being made a citizen or had been by act of Parliament, that Fuchs was a Communist or had a Communist background, that Fuchs had been interned in Canada as a German, and then released, all of the things that would have made me say, 'Well, leave Fuchs at home.' None of that was given."

175
15th from bottom

After the words, breakdown of compartmentalization, add (new paragraphs (2)):

570

"MR. GRAY: You think there was information, and it seems clear that Fuchs was involved in the transmission of information, you think it was confined exclusively to Fuchs?"

"THE WITNESS: No, I think the data that went out in the case of the Rosenbergs was of minor value. I would never say that publicly. Again that is something while it is not secret, I think should be kept very quiet, because irrespective of the value of that in the over-all picture, the Rosenbergs deserved to hang, and I would not like to see anything that would make people say General Groves thinks they didn't do much damage after all."

176
14th from top

After the words, to ^{out} get the uranium. add:
"It was not conceivable; even today nobody knows how many bombs they have."

572

Page
Missing

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D. C., April 16, 1954

The above entitled matter came on for hearing, pursuant to recess, before the board, at 9 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen B. Ecker, counsel for J. Robert Oppenheimer. Herbert S. Marks, co-counsel for J. Robert Oppenheimer.

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<u>Page and Line No.</u> <u>U.S. GPO Copy; 1954</u>	<u>Remarks</u>	<u>Page No.</u> <u>Classified</u> <u>Copy</u>
228 19th from bottom	Directly after the words, <u>with early 1950</u> , add: "and continuing until the spring of 1951".	738
233 16th from top	After the words, <u>thermonuclear test</u> , add: "or of our operational readiness in this field,"	753
233 21st from top	After the words, <u>By Mr. Robb</u> : add: "Doctor, I wish you would help me a little bit with my notes on your testimony to see if I have understood you correctly. Was it your testimony that you never learned that the Russians were working on the hydrogen bomb? "A. I never learned that the Russians were working on the hydrogen bomb, and I was never given any indication or any intelligence indication which even pointed strongly in that direction. I was told that the Russians had obtained from Fuchs, or might have obtained from Fuchs, information about what we were thinking about the hydrogen bomb in 1946. "Q. When did you hear that, Doctor? "A. At a GAC meeting, either from the Commissioners or from the intelligence officer. I have forgotten. After the President's decision. "Q. Would it have been a fair conclusion of that, that the Russians knew that we were working on the hydrogen bomb? "A. I am not sure. The British who knew all about it up to that point assumed that we were not and decided themselves not to."	753 & 754

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission,
Building T-3, Room 2022
Washington, D.C., Monday, April 19, 1954

The above entitled matter came on for hearing, pursuant to recess before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward V. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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<u>Page and Line No.</u> <u>U.S. GPO Copy; 1954</u>	<u>Remarks</u>	<u>Page No.</u> <u>Classified</u> <u>Copy</u>
301 25th from top	After the words, <u>facilities which give you</u> add: "the two component parts of a weapon,"	962
302 19th from top	After the words, <u>for the Savannah River re-</u> <u>actors,</u> add: "and whether you optimized them to produce plutonium or whether you optimized them for the production of other things that looked likely in the thermonuclear program."	965
302 29th from top	After the words, <u>were brought in here</u> add: "under the auspices, rather joint, of the Atomic Energy Commission and the Air Force, to analyze the Russian explosion. This they did"	966
303 3rd from bottom	After the words, <u>that might cost us</u> add: "anywhere from 20 plutonium bombs up to 80"	971
304 2nd from bottom	After the words, <u>which as I say, delete increased</u> and add: "almost made it possible to double"	974
305 33rd from top	After the words, <u>thermonuclear weapon</u> add: "It was so different from the things that had been kicked around back in the fall of 1949 that there was no resemblance."	976
305 35th from top	After the words, <u>atomic energy program</u> add: "-- this method."	976
305 41st from top	After the words, <u>an idea.</u> add: "The old idea of the weapon was pretty well dis- carded. It got about a fourth priority. Two gadgets were decided upon to try. One had great promise. We didn't know whether it was going to work or not, but it had great promise."	977
305 45th from top	After the words, <u>for a new plant</u> add: "to develop an entirely new material."	977

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305
7th from bottom

After the words, it might work. add:
"It has since been demonstrated,"

978-9

313
4th from top

After the words, on fission bear on fusion.
add:
"Some of our current gadgets get much of their
energy from the fission process as well as the
fusion process."

1003

316
8th from top

After the words, connection with the add:
"long range"

1013

316
11th from top

After the words, A. Oh, yes, add:
"Q. Was that done under the auspices of the AEC?
"A. Strictly speaking it was AFOAT."

1013

316
21st from top

After the words, with the add: "long range"

1013

316
36th from top

After the words, that there were add: "three"

1014

316
36th from top

After the words, methods of add: "long range"

1014

316
45th from top

Classified transcript deleted is as follows:

1015-1016

"MR. ROBB: Are you ready, Doctor?"

"DR. OPPENHEIMER: Yes, sir.

"THE WITNESS: The question is whether three methods
were discussed?"

"BY MR. ROBB:

*See
Vol VI a*

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"Q. Yes.

"A. I am not the best witness on this. I only recall two basic ways of determining it.

"Q. Which were they?

"A. One would be by cloud analysis and sampling in which you use radiochemistry to determine the fragments that are there and their half lives. You can determine roughly the efficiency of the burnup of the material and things of this character. We had a program on to sample and in that way it was determined. That was Dr. Oppenheimer's chief role at that time in this field of sampling clouds.

"Q. Mr. Dean, would that be called the nuclear method?

"A. I am not a good witness on this. Yes, it involves both chemistry and it involves nuclear physics subject to correction at all times.

"Q. What was the other method that you recall?

"A. The other kind of obvious method would be things like measuring the earth shock or sound waves, things of this character, as you do in recording an earthquake.

"Q. That is the seismic method.

"A. Yes.

"Q. Was there a third method which was referred to as the sonic method?

"A. I would think they might try that, too.

"Q. Which method did Dr. Oppenheimer espouse?

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"A. I don't think he espoused any. I know the one we detected, it was the first method, and that is the one he was concerned with.

"Q. Do you remember he opposed instituting the seismic and sonic methods in the future?

"A. I have no knowledge of this.

"Q. Do you recall that he suggested that those methods be not adopted without further extensive research?

"A. I have no knowledge of this.

"Q. You have no knowledge of that at all?

"A. No. I wouldn't ordinarily, because again he is sitting as a committee of advisors, you see, reporting to the Air Force, not to the Commission. The Commission had to follow it closely, but it was in that capacity that he acted in 1949, and subsequent occasions when the Russians exploded.

"(Discussion off the record.)

"MR. GRAY: I don't believe we can get anything in the record on the basis of his testimony on that. Is there anything else along this line?

"MR. ROBB: Nothing further."

319
23rd from top

After the words, By Mr. Robb: add:

1025

"Q. Do you recall, Mr. Dean, that there was a meeting up there in February 1952, at which you testified?

"A. I was there about once a week for about four years.

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"Q. That is why I wanted to read this to you to see if it rang a bell.

"A. Am I supposed to be testifying at this point or someone else?

"Q. I am just about to read it. As I understand it, Senator Hickenlooper was talking, and you were on the stand, and you stated that 'progress had been sudden and remarkable in the last two years.'

"Senator Hickenlooper then said, 'I might tend to agree with your statement that you made some substantial progress. I mean I may be reckless for not going faster, but the General Advisory Committee in 1949 was against the hydrogen project. A majority of the Commission was against the hydrogen project. If you will read the minutes which you probably have, you will find it stopped on dead center there and never even got started until late 1949, or perhaps I think the Chairman went after them and raised the devil with the committee expressed its thinking we ought to move on that project. But I do think there was an inertia there for a long period of time. I wish to say the lease has not been picked up except in the last couple of years.'

"'Mr. Dean. That is true.'

"Do you recall that taking place, or anything like that?

"A. It might have been.

MR. GARRISON: Mr. Chairman, I think that ending abruptly at this point I have no idea what else Mr. Dean may have added to that.

"THE WITNESS: Is there something that follows that?

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"MR. GARRISON: Or what the next topic of conversation is?

"MR. ROBB: Yes, I will read the next:

"Hickenlooper: So the whole hydrogen project has suffered from an inertia since 1946. Based upon the limitations of the experiments and the knowledge at that time in 1946, we had two or three expositions of the feasibility of this hydrogen project and flat statements from reliable people that in their opinion the hydrogen explosion was feasible based upon what they had learned up to that time. They said there were things they had to prove. That is very true. But there was a complete inertia and the General Advisory Committee was partly responsible for that, and the Commission was partly responsible for that, because both of them by majority vote advised against going into the hydrogen problem.'

"MR. GARRISON: This is all Senator Hickenlooper?

"MR. ROBB: Yes. sir.

"Some of the reasons were put on moral grounds, others were put on the question of feasibility, but there was that inertia, and that has contributed to us being no farther along than we are at the moment'

"BY MR. ROBB:

"Q. Mr. Dean, was there inertia?

"MR. GARRISON: Did Mr. Dean make any comment?

"MR. ROBB: No, sir, not that I have here.

"THE WITNESS: The full text of the hearing might be enlightening to the Board.

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"MR. ROBB: I don't have that. I am sorry.

"THE WITNESS: I am sure you can get it from the Joint Committee. The word 'inertia' is perhaps not the best to describe a very complicated situation. If I can go back into a little history, and I think this does become important because of these popular charges I have seen of delay in the hydrogen bomb.

"MR. ROBB: That is why I wanted to get your views."

330
27th from top

After the words, made by Dr. Teller add:
"That was made in the spring of 1955."

1066

330
32nd from top

After the words, which Dr. Teller had add:
"together with his colleague Ulam, also of Los Alamos,"

1066

330
37th from top

After the words, things changed very much add:
"in the spring of 1951. In the spring of 1951"

1066 & 1067

330
12th from bottom

After the words, With the new, delete "idea"
and add: "principle,"

1067

331
26th from bottom

After the word, new, delete "idea" and add:
"deviations"

1070

331
24th from bottom

After the words, It was a new delete "idea"
and add "deviations"

1070

331
12th from bottom

At the beginning of the sentence insert:
"In the spring of 1951,"

1071

334
10th from top

After the word Teller, add "in 1951"

1079

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334 13th from top	After the words, <u>have come sooner</u> add: "than 1951?"	1079
344 8th from bottom	After the word <u>negotiations</u> , add: "that he felt we would be able to reach agreement with the Russians; that they were very friendly -- he called Gromyko by his first name -- and he thought we would get somewhere and we could make some compromises which would enable us to reach agreement on control."	1115
344 2nd from bottom	After the words, <u>that matter was Patterson</u> add: "about the Russians being friendly and compromising."	1115
345 13th from top	After the words, <u>it is all right</u> add: "for me"	1116
346 5th from top	After the words, <u>from time to time</u> add the following three paragraphs: "The only thing that I remember about this year, which was very indecisive -- nothing much happened -- was that Dr. Oppenheimer by this time said that we had made so much atomic material that it would no longer be safe to distribute it under the Baruch Plan. It would put too much atomic material in countries other than the United States. "He felt very strongly that this thing, even the Baruch Plan, was no longer safe, because the Baruch Plan was made for immediate acceptance at the time when there was almost no atomic material around. By 1949 we had a good deal of it. "This I remember very distinctly and would be born out by the records of my consulting committee, I am sure."	1119

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346
22nd from bottom

After the words, By Mr. Garrison: add:

1121

"Q. When you said in the summer of 1949, Dr. Oppenheimer reported to your group that he felt that the stocks of atomic materials had grown so much that it would be dangerous to have a distribution under the Baruch Plan, that was before the Russian explosion.

"A. I think this must have been in the spring of 1949. Well before. I am sure it was before September. It must have been in the spring because that is when we were still having consultations with the so-called sponsoring powers and this was the information I wanted to get, should we go on or should we pull out."

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2002,
Washington, D.C., Tuesday, April 20, 1954

The above entitled matter came on for hearing pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward V. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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355
29th, in center of
page

After the words, information of the board
add (new paragraph):

1141
&
1142

"I was during the war for a year and a half in Lisbon in the capacity of counsellor of the Legation, and there by arrangement with people in Washington a special function as the co-ordinator of American intelligence activities in Portugal. Those activities as you will recall were very important during the war. The various American intelligence services had a very difficult time coordinating their activities with one another, and with the British and it fell to me in a personal and quiet way to try to straighten out all those tangles, and to see that our agencies acted in accord with one another, and particularly in accord with what our allies were doing. The dangers of confusion were really very great and could play into German hands very easily."

356
27th from top

After the words, that are obvious. add (new
paragraph):

1145

"The supplies of raw materials which we required were ones to which we had access only by virtue of agreements which also involved the British, and we could have gotten into very, very embarrassing and difficult positions."

362
23rd from bottom

Insert where first line of stars are, the follow-
ing paragraph:

1167

"A. Because if what you had in mind was retaliation there is a possibility that what we already had would have been enough. I may say there I disagreed on numbers of occasions with lots of the other analysts in this government as to the number of the old bombs that would have to be used against the Soviet Union to produce very serious disruption of its life. We have disagreed about

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the feelings of the Soviet leaders with regard to this. I don't think personally that any war in which as many as ten of these bombs were dropped with a reasonable degree of accuracy on Soviet cities and installations would be regarded by the Kremlin leaders as worth a candle."

362
13th from bottom

Second line of stars should be replaced by the following two paragraphs:

1168

"What I would like to emphasize is that these plants, these industrial communities they have built, those are the apples of their eye. They do value them immensely high. It would be for them according to their lights a heartbreaking thing to have any of these places destroyed again. As I say, I have often not agreed with other government experts about this. I have felt that the Soviet Union was fairly vulnerable to this type of bombing due to the high degree of concentration of its industrial strength in the individual plants. I have often pointed out if you take the top three steel plants in the Soviet Union, you get something like 40 or 50 percent of the Soviet steel production. If you take the top three steel plants in the United States, you get about something like 18 percent of ours.

"Therefore, they are vulnerable in certain ways that we are not. For that reason I was never satisfied that it was possible to say that we did not have enough in the way of retaliatory capacity even before we proceeded to the hydrogen bomb. I always wanted to see that clarified."

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385

Between the fourth and fifth paragraphs from the bottom of the page. After the words speak in general terms, add (new paragraph):

1247

"It was quite clear when we took over that because of a number of factors the further development of atomic bombs had been allowed to almost lapse and we were from the point of view of equipment with atomic bombs practically unarmed."

385

10th from bottom

After the words Los Alamos was revived. add: "We got a head with enough hydrogen bombs to make some kind of stockpile."

1248

398

17th from bottom

After the words damaging to morale., add (two paragraphs):

1291
&
1292

"The most shocking thing we found was that we had rather assumed we gathered the military had, that we had a rather accumulation of atomic bombs in storage. We sent Dr. Bacher to examine into this, and we found that this was not true, and we were virtually without any atomic bombs. Moreover, the methods that we had for building up the stockpile were handicraft methods, rather than the kind you find in an industrial operation.

"The files of that time will, of course, footnote this, and I will not take the Board's time than to do more than identify some of the things we found. It was not a very comfortable thing to find."

407

15th from top

Delete line 15 and insert in lieu thereof:

1321-1350

"MR. ROLANDER: (Reading)

"Meeting of the National Security Council, Committee on the Super Bomb. Present: Secretary

See Vol VIII a

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Acheson, Secretary Johnson, Under Secretary Early, Mr. Lilienthal, Dr. Smyth, Gen. Burns, Mr. LeBaron, Mr. Fisher, Mr. Arneson, Adm. Souers and Mr. Lay, 10:15 a.m.--12:15 p.m., January 31, 1950, Room 216, Old State Building. (Memorandum dictated by David E. Lilienthal, January 31, 1950, 4:00 p.m.)

"Secretary Acheson opened the meeting. He stated that the Committee had had one meeting, that there had been a certain amount of staff work, papers prepared and discussions by the members of the Committee; that it appeared to him that the proper procedure was for the members of the Committee to agree upon a recommendation, to be followed by a paper written by staff, after staff knew what members of the Committee were prepared to recommend. Secretary Acheson then said he had before him a paper which he said summarized the background. He said that it was not necessary to read the paper if the members of the Committee did not particularly desire this, that it would suffice to read the conclusions reached in the paper. He thereupon read the following:

"In the light of the foregoing considerations, the following recommendations are made:

"a. That the President direct the Atomic Energy Commission to proceed to determine the technical feasibility of a thermonuclear weapon, the scale and rate of effort to be determined jointly by the Atomic Energy Commission and the Department of Defense; and that the necessary ordnance developments and carrier program be undertaken concurrently.

"b. That the President defer decision pending the reexamination referred to in (c) as to whether thermonuclear weapons should be produced beyond the number required for a test of feasibility;

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"'c. That the President direct the Secretary of State and the Secretary of Defense to undertake a reexamination of our objectives in peace and war and of the effect of these objectives on our strategic plans, in the light of the probable fission bomb capability and possible thermonuclear bomb capability of the Soviet Union.

"'d. That the President indicate publicly the intention of this Government to continue work to determine the feasibility of a thermonuclear weapon, and that no further official information on it be made public without the approval of the President.'

"Secretary Acheson then handed out a proposed statement which the President might make in conformity with paragraph (d) of the recommendations. The proposed statement is as follows:

"'There has been much public discussion about a project for testing the possibility of a so-called hydrogen or super bomb. The democratic process requires that the people of this country be informed in an orderly manner of decisions which are being made which affect their security.

"'It is part of my responsibility as Commander-in-Chief of the armed forces to see to it that our country is able to defend itself against any possible aggressor. Accordingly, the Atomic Energy Commission has been directed to continue with the development of all forms of atomic weapons. This work includes a project looking toward a test of the feasibility of the hydrogen bomb. Like all other work in the field of atomic weapons, it is being and will be carried forward on a basis consistent with the over-all objectives of our preparedness program.

"'It is important that this project be viewed in its proper perspective. No preparedness program can rely

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on any single weapon. This is all the more true of a weapon which, given the agreement of others to effective international control, we propose be banished from national armaments. Furthermore, no preparedness program, no matter how effective, can do more than provide the shield behind which we persevere in our struggle to foster the idea and the reality of individual freedom and human dignity. Our sense of dedication must be directed to the pursuit of an honorable course and to the strengthening of the free world, for there is no short cut or easy way to security or to international peace and justice.'

"Secretary Johnson then commented on Secretary Acheson's proposal. He said that the Defense Establishment was in agreement with the recommendations; they had two suggestions to offer. One was that Recommendation b. be eliminated. Recommendation b. reads:

"'That the President defer decision pending the re-examination referred to in c. as to whether thermonuclear weapons should be produced beyond the number required for a test of feasibility.'

"Secretary Johnson also submitted an alternative draft of statement for the President to make. It is much briefer than the one proposed by Secretary Acheson; a copy was not supplied to me but it was read aloud.

"Secretary Acheson said we appeared to be in agreement; should we not see if we could compose the differences between the two proposed public statements.

"Mr. Early said he recommended that the statement be made by the President in the form of a hand-out by Charles Ross rather than at a press conference. Secretary Johnson agreed, saying that the thing to do was to play it down, make it just one of those things. Mr. Early further said that the last paragraph of the State Department version seemed better left off. Secretary

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Johnson thought the first paragraph better be omitted and that we should add something from the statement he recommended about continuing this development until international agreement was reached. I urged that a sentence be added strengthening the idea that it was not only international agreement that was involved, but a reexamination of our whole position, so I wrote out the following: 'We shall also continue to examine all those factors that affect our program for peace and this country's security.' The words I prepared were accepted. I also suggested that the statement say that the President's direction related to continuing work, rather than give the impression of suddenly beginning something wholly new. I proposed amending the sentence as it originally read in the State Department draft from: 'Accordingly, the Atomic Energy Commission has been directed to continue with the development of all forms of atomic weapons. This work includes a project looking toward a test of the feasibility of the hydrogen bomb.' to 'Accordingly, I have directed the Atomic Energy Commission to continue its work on all forms of atomic weapons, including the hydrogen bomb.' This was accepted.

"In its approved form the recommended statement by the President read as follows:

"It is part of my responsibility as Commander-in-Chief of the armed forces to see to it that our country is able to defend itself against any possible aggressor. Accordingly, I have directed the Atomic Energy Commission to continue its work on all forms of atomic weapons, including the so-called hydrogen or super-bomb. Like all other work in the field of atomic weapons, it is being and will be carried forward on a basis consistent with the over-all objectives of our program for peace and security.

"This we shall continue to do until a satisfactory plan for international control of atomic energy is achieved. We shall also continue to examine all those factors that

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affect our program for peace and this country's security.'

"At this point I asked an opportunity to express my views, which was afforded me.

"I began by stating that I was under no illusion about the limited value or effect of advice to the President from me, when it conflicted with a recommendation agreed to by both the Secretaries of State and Defense. Nevertheless, my reservations about the course recommended, in some important respects, were so great that I felt it necessary to refer to them very briefly. Following is my recollection of my remarks.

"For three years, since the beginning of the Commission, I had made efforts to have the Commission function in the spirit and the letter of a law providing for civilian control of atomic weapon development. The statute provides that the President annually should determine the rate and number and kinds of weapons produced. Annually the Commission and the Secretary of Defense transmitted jointly to the President a memorandum on this subject which the President approved, and which thereupon became the Commission's directive. At no time was the Commission supplied with any of the information or views of the Military Establishment upon which the Military recommendations had been based. Therefore the Commission at no time examined into the underlying assumptions and the policies and plans of the Military Establishment in respect to the necessity for or the adequacy of the number of weapons provided for and the rate of their production. I did not think this represented a serious issue, except in the abstract, up to the time of the expansion program proposal of last spring. The reasons this is so is that saying that we needed everything that could come out of the spigot was so obviously right that no examination of assumptions was required.

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"When the expansion program came along last spring and summer a different situation appeared. The President himself directed that the assumptions underlying this proposal be examined into by a special committee of the National Security Council, consisting of the same members as of this committee. (See letter to Adm. Souers from The President, dated July 26, 1949.)

"But this move to examine into the military assumptions and policies did not succeed. I said the reasons why it didn't succeed were not particularly relevant at this juncture.

"The proposal for accelerated research and development toward a thermonuclear weapon, however, presented a clear case where the underlying assumptions, policies and plans of the Military Establishment to provide for our defense needed to be examined independently if there was to be substance to the principle of civilian control of atomic weapons by the Commission. If a military conclusion could not be examined into and was not examined into independently by the Secretary of State, the Atomic Energy Commission, and of course by the President, but was regarded as the whole answer to the ultimate question, then this definitely removes any notion of civilian participation in a fundamental policy question.

"A beginning of an examination of military assumptions, policies and plans for the security of the country by members of this Committee, and by staff has been made in the past weeks. I stated as my opinion that this represented substantial progress. I stated that the recognition that the Secretary of State as well as the Secretary of Defense had a right and a duty to examine into these assumptions and see if they furthered our overall national purposes was an important outcome of this whole consideration of the super bomb.

"Accordingly, I thought Recommendation c. was an important element in this whole matter; namely, a real inquiry

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into the basic question: what is the best way to further the common defense and security, to which questions as to our atomic bomb programs and the plans for their use, and the thermonuclear development are subsequent.

"I said moral questions, questions of the utter frightfulness of this weapon, questions of again seeking international control -- all are relevant but none seem to me the central questions.

"A principal misgiving and grave reservation about the wisdom of the recommendation to proceed forthwith, and without more, with the thermonuclear research at an accelerated pace, and proceed prior to this all-important reexamination of our present course was as follows: that I felt that such a direction by the President, prior to that reexamination and perhaps resetting of the course would be highly prejudicial to the examination itself. I recognized that the atmosphere of excitement resulting from a further delay of a decision of the President would not be the best atmosphere in which to function. I was, however, impressed, in my own mind, with the counter consideration: that the atmosphere resulting from the conditions under which to conduct the examination and would probably make a new approach to the atomic weapons race impossible. The injury to vital concerns affecting our security and our position in the world and to the likelihood of a searching objective reexamination, outweighed in my mind the troubles inherent in the course of taking a new look first.

"The central question seems to me not whether we should build the super bomb or not build it. Rather we should first face up to weaknesses in our present national position and not threaten by a decision now what might be the last chance to adopt a less certain course of danger. The decision to proceed before exploring those weaknesses and see what we could do about them might well mean we would not later be able to face up to them,

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or we just would not face up to them, or facing up to them would come too late. I admitted that the weaknesses I saw in our present course might not be confirmed by such a hard new look, or might be even worse than I feared. But unless we faced up to them as a principal problem, they would plague our future Secretaries of State and Secretaries of Defense, Chiefs of Staff, and Presidents and bear them down with perhaps overwhelming problems; whereas if perhaps faced up to now they were not unmanageable.

"The decision recommended here is to proceed now to 'augment to the greatest extent possible the effort devoted to (super-bomb) research' and to proceed with a test in 1952 as a target, that is a test 'at the fastest practicable rate.' The disadvantages of this course that I see are of several characters. First the act of directing that this proceed can not be minimized by mere statements such as we recommended to the President. It is too great an act for that. It is more eloquent and meaningful than any words that accompany it, or any speech saying it means this or that.

"The act, I feared, would be widely regarded as a confirmation in the clearest possible terms of our present chief and almost sole reliance upon this kind of armament against the Russians.

"It seems to me that the present course of having, as General Bradley indicated, virtually nothing else but the atomic bomb that we could use for the defense of Europe today, or in the near future, is clearly a weakness; we would hide from ourselves the existence of that weakness by magnifying and redoubling and multiplying our efforts along the same course, a course that seems to me highly doubtful of value today.

"I stated that in my opinion we are today relying on an asset that is steadily depreciating for us, i.e. weapons of mass destruction. The President's decision

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would tend to confuse and, unwittingly, hide that fact and make it more difficult to find some other course.

"The act of going ahead would tend to provide a false and dangerous assurance to the American people that when we get this new gadget 'the balance will be ours' as against the Russians. As evidence in support of this, I cited two kinds of witnesses. One, the Joint Chiefs of Staff in their paper dated January 13, 1950, Memorandum for the Secretary of Defense, Subject: Request for Comments on Military Views of Members of General Advisory Committee. See Pages 9 and 10 for example as follows:

"(4) QUESTION: Would known possession of the super bomb grossly alter the psychological balance between the United States and the USSR?

"COMMENT: They believe it would, and, further, that the balance would be grossly in favor of the United States until such time as the USSR had developed a stock pile of super bombs.

"(5) QUESTION: What effect did announcement of the Russian explosion have upon the feeling of security of the American public?

"COMMENT: The Joint Chiefs of Staff are informed that this is a question now under highest priority study by the Central Intelligence Agency. So far as the responsibilities of the Department of Defense are concerned, the Joint Chiefs of Staff are of the opinion that the American public now feels less secure than prior to their knowledge of Russian possession of atomic capability and that the public expects the Department of Defense to take action necessary to regain the favorable balance previously held.'

"I do not believe it is clear at all that the assumptions here implied are justified.

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"I referred also to comments of leading members of the Congress during the past week or so. These comments include those of the Chairman of the Committee on Foreign Relations of the Senate and of the Minority Leader Senator Wherry. They show that assumptions will be drawn from proceeding with this development which I do not believe are justified, and I fear will make more difficult a facing up to the wasting and dwindling value to this country of weapons of mass destruction as the principal basis of the defense of this country and of Europe.

"I said I was concerned that the act of going ahead, far from strengthening our defense or atomic program, would magnify its weaker aspects. These aspects include such matters as (1) the value of A-bombs since September 23 to deter or to prevent Russia overrunning our European allies; (2) the impact of the decision to proceed, on the feeling of the inevitability of war, and therefore weakening the basis of our present course, which is there will be no war soon.

"At this point I interpolated that the present assumption of this Government is clearly that there will be no war with the Russians in the immediate future, that is to say in the matter of two or three years. If this is not a sound assumption, if the assumption is that war is likely in the next two or three years then the question of proceeding with the H-bomb is an easy one; but more important than that we should be getting ready for war, whereas at the present time we are not getting ready for war. I said we ought on that assumption to send my son back into the service; we should be really taxing ourselves; we should stop the making our pleasure automobiles, etc. etc.

"But this is not the assumption. The assumption is that we are not going to have a war with the Russians in the next few years. Therefore why can we not spend a few months for an intensive and realistic reexamination of

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the worsening of our position as the result of our preoccupation with atomic weapons. It seemed to me that this was a far wiser course than to make a decision, prejudicing the reexamination and, I feared, making it increasingly difficult if not impossible to face the realities, or to take another course that might save the world from the fury of the atomic arms race and the tension between the USA and USSR.

"It seems to me that unless the assumption is an early war we have the time to realign our policies and ought to do nothing to make that realignment more difficult or perhaps (as I believe) well-nigh impossible.

"I said there were other weaknesses in our present course which I feared the decision at this time might make harder to correct. Thus, we take a position as a nation that atomic weapons should and must be eliminated. But our military leaders are depending almost entirely upon atomic weapons in the event of war. This kind of contradictory position is not merely a defect of reasoning, a faulty argument. It is a positive danger to continue both those courses at the same time. To go ahead on a new cycle of atomic weapons, the super, might well make it more difficult for that defect to be faced and something done about it.

"The net of my reservation about this recommendation therefore was this: the decision to proceed forthwith, with nothing more, may be, and I fear will be to miss an opportunity to reexamine and realign our policy, a better opportunity than may ever appear again to better our security and promote something better than a headlong rush to a war of mass destruction weapons.

"Following my statement, Secretary Acheson said that he found little in what I said with which he would disagree. He said, further, however, that it still did not offer an alternative that appealed to him, that he felt that the pressure for a decision was so great,

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that the discussion and feeling in the Congress had reached such a point that to defer the decision to this purpose was an alternative that he could not recommend. Secretary Johnson apparently agreed. We must protect the President he said.

"We then proceeded to a discussion of the recommendations themselves. Dr. Smyth suggested to me that Paragraph b, which the Secretary of Defense urged be left out, should be retained. His point was that b, left in tended to justify and strengthen the idea of a reexamination. Secretary Johnson said that he felt b was not needed and that he had other objections (which he did not explain) to it. It was stricken out.

"Paragraph c, directing the reexamination of objectives was then discussed. It was pointed out that in the paper presented by Secretary Acheson the Chairman of the Atomic Energy Commission, my successor, was omitted from the group. The reasons for this the Secretary of State stated were several. He said there was first of all the obvious difficulty of working with a five-man Commission in a matter of this kind. The second point was that to have the Commission on the same level as the head of a Department might seem inappropriate. Third, that the Commission's function was actually related to the technical aspects rather than the issues that were the subject matter of this direction. Admiral Souers pointed out that this reexamination would involve discussion of strategic war plans, and the whole field of our world relations. Secretary Acheson added that our relations with the Russians were now in a worsening condition. The inference I drew from this discussion was that this participation in basic policy examination was regarded as rather remote from the functions of the Commission as conceived by the other members of the Committee. Secretary Acheson asked my opinion about the omission of the Commission. I said that I would defer to Dr. Smyth's

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opinion on this since I was practically out of office, and it was a matter of direct concern for my colleagues and my successor. With this qualification I stated that I was in agreement with the five-man Commission point was a good one; that the problems of the Chairman of the Commission or the representative of the Commission serving as a co-equal with individuals who are the heads of their departments and could speak for them was a real and substantial difficulty. Secretary Acheson said there was the further difficulty that under the law and the Commission's practice the Joint Committee on Atomic Energy was kept informed by the Commission on almost a day-to-day basis; that the inclusion in the Commission of this study would doubtless require that the current investigation into this matter be supplied to the Joint Committee while the discussions were tentative and even though they included matters of the utmost secrecy; this was a major objection. I said that I could not agree that this was a real point; that he thought the five-man Commission point could be worked out but that the Joint Committee problem was a real one in this kind of a situation. Admiral Souers concurred about this Joint Committee phase of the matter. Secretary Acheson said further, however, that it would be his purpose and intention to consult on technical matters with a technically qualified member of the Commission, presumably Dr. Smyth. Furthermore he said that specifically the General Advisory Committee to the Commission or members of that Committee would certainly be consulted, particularly since they had taken a strong and critical view about our present policies in this whole matter.

"Secretary Johnson then recommended we go to the White House at once and get a decision. He said he already had an appointment at 12:30 and we could use that. He said the heat was on in the Congress and every hour counted in getting this matter disposed of.

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"CROSS EXAMINATION

"BY MR. ROBB:

"Q. May I ask you, sir, do you take shorthand?

"A. Yes.

"Q. So I assume you made shorthand notes on this meeting.

"A. I do take shorthand and I did take notes.

"Q. The recommendations A, B, C and D, had you seen, or been told about those before they were read by Mr. Acheson?

"A. No. The general tenor of the discussions didn't make this a surprise, but I had not seen the recommendations.

"Q. Had you consulted with them about what they might be?

"A. With Secretaries Johnson and Acheson?

"Q. Yes.

"A. My recollection is rather unclear on this. We only had one meeting with the two Secretaries as I recall. That was in that same week. I am not very clear on that.

"Q. Were those recommendations in accord with your views?

"A. No, they came closer to my views in the light of these reservations I have expressed than the final recommendation, because they did imply that there would be a reexamination of our whole situation in connection with this undertaking. The reason this recommendation

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comes closer than would appear on the surface is that this recommendation seemed to me to be not the accelerated all out crash program that had been considered, but something less than that, an accelerated research and development program with a test, rather than a crash production program. That seemed to me to have some merit. These recommendations I was prepared to go along with for whatever importance it had, which was not very much, if there could be a really strong statement about a reexamination of our weakened general military and diplomatic position.

"Q. You were in accord with recommendation B, were you not, that the President defer decision pending the reexamination referred to in C, as to whether thermonuclear weapons should be produced beyond the number required for a test of feasibility?

"A. No, I think not. My preference would certainly have been that the President would have instituted a reexamination without doing more than having the Commission continue its research and development program. That recommendation B is considerably short of that.

"Q. Considerably short looked at one way; another way it goes considerably beyond what you thought you ought to do, doesn't it?

"A. Yes.

"Q. In other words, you thought you ought merely to reexamine the situation without going ahead with the program, is that right? That is, the thermonuclear program?

"A. I thought a continuation of the program that I have described here, including the so-called 'booster' which is a classified code name, this is the 25 times the Hiroshima bomb, plus and continuing the pace on

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the research and development work, while a real look at what Korea made us look at whether we like it or not would have been the best program at the time for the reasons stated. I did not underestimate the difficulties of following up a program in view of the great commitment of the H bomb at that time. I thought it was important that some one state what the other side --

"Q. In other words, what you were for was continuing research, but not going ahead with a thermonuclear program beyond that, is that right?

"A. I think the word 'crash' program comes as close in shorthand of what I thought we should not institute. That in fact is what was instituted. A research program carrying the super development along would not require any public announcement, which it was quite evident the crash program would.

"Q. Were you in favor of going ahead with the program to the point of testing a thermonuclear weapon?

"A. I don't know that alternative was ever open.

"Q. Did the program which you envisioned and which you favored include a test of thermonuclear weapon?

"A. The view I expressed here was that before that kind of decision is made that we take a look at the effectiveness of our whole military and diplomatic situation and repair that as part of a further weapon program. If that further weapon program required an H bomb, that would be another matter. But we could not decide it under the circumstances of having made a profound public decision to go ahead on a crash program of the H bomb. I am afraid that events rather confirmed that. A reexamination, although there are some indications in this statement, will be made, a reexamination was not made.

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"Q. So you were not in favor prior to what you describe as a reexamination of embarking on a program which would lead to a test of a thermonuclear weapon, were you?

"A. I was not at this time in favor of a crash program, that is right.

"Q. No, sir, that is not my question, Mr. Lilienthal. Is my question not clear to you, sir?

"A. Obviously a test would be required in a crash program. I think this makes rather clear that I thought it was unwise to embark on to accelerate the program, including a test, until we had seen whether the program we then had and our general starving of the rest of our military establishment was not a dangerous thing and should not be corrected. I think that is as near as I can come to answering it.

"Q. Were you in favor of any program, whether you call it a crash program, or what, which would include a test of a thermonuclear weapon?

"A. Not at that time.

"Q. That is what I wanted to get.

"A. This is a preliminary to any such program.

"MR. GRAY: May I interrupt a minute?

"(Discussion off the record.)

"BY MR. ROBB:

"Q. Mr. Lilienthal, I notice on page 3 of your memorandum, you refer to the discussion of the language of the President's announcement. You say, 'I proposed amending the sentence as it originally read in the State Department draft from: "Accordingly,

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the Atomic Energy Commission has been directed to continue with the development of all forms of atomic weapons. This work includes a project looking toward a test of the feasibility of the hydrogen bomb."

"You favored changing that to, 'Accordingly, I have directed the Atomic Energy Commission to continue its work on all forms of atomic weapons, including the hydrogen bomb.'

"You eliminated the reference to a test, didn't you?

"A. No, I was assuming --

"Q. Did you say no?

"A. Let me explain. I was assuming that the recommendation of the President would be as joined in by the Secretary of State, and the Secretary of Defense. I was trying to strengthen that statement by a portion of my views which are included in this statement. But I did make clear to the other members of the Committee that I thought before we did anything, this stern re-examination of our picture should be taken.

"Q. Yes, but the language which you wanted included in the statement eliminated any reference to a test, didn't it?

"A. Yes. I thought I made that clear.

"Q. Now, you refer to 'to continue its work on all forms of atomic weapons, including the hydrogen bomb.' Just what work were you doing on the hydrogen bomb?

"A. There has been over a period of years work in the theoretical division of the Atomic Energy Commission or the Los Alamos Laboratory, and this was directed toward the rather considerable problems of making a bomb which would be based on the ignition of hydrogen, tritium and so on, a bomb described in a public document and

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usually referred to as the hydrogen bomb. That work was going on. The details of it I am not familiar with, but it was certainly being carried on from the first contact I had with the Commission.

"Q. That is what I am asking you about, Mr. Lilienthal. What were the details of the work which you referred to in that statement, 'to continue its work on the hydrogen bomb.' Just what was being done?

"A. I have to refer to the records on that but there was a program of investigation of thermonuclear reactions.

"Q. Yes, you said that before. But what I am getting at is precisely what were you doing? How many people had you working on it?

"A. I don't know.

"Q. How much time had they spent?

"A. I can't answer that and couldn't precisely at that time. The records are available. It was part of the work program of the Los Alamos Laboratory and it was reported from time to time.

"Q. If I told you, Mr. Lilienthal, that the record showed that there was comparatively little work that had been done or was being done, would you dispute that?

"A. No, comparatively little compared to the other programs that were approved, I am sure that is true.

"Q. I will reframe the question. If I told you that the records show that there was little work that had been done, would you dispute that?

"A. Yes, I think I would. It covers a long period of time.

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"Q. Now, referring to page 4 of your memorandum, you say, 'At no time was the Commission supplied with any of the information or views of the Military Establishment upon which the Military recommendations had been based. Therefore the Commission at no time examined into the underlying assumptions and the policies and plans of the Military Establishment in respect to the necessity for or the adequacy of the number of weapons provided for and the rate of their production.'

"By that did you mean that you didn't have much information about what the Military was doing or what they wanted?

"A. No. The reason for their wanting it. They said, 'We want X amount of material in this next year.' The Chairman of the Commission on behalf of the Commission underwrote this as a conclusion as if we had an opportunity to examine the reasons for that conclusion of the Defense Establishment. We didn't have that information. What we did was to sign jointly with the Secretary of Defense a statement of what the program the President should follow.

"Q. Were you privy to the plans and needs of the military?

"A. No, we were told what their requirements were, but we were not supplied the information as to the basis of that.

"Q. On page 5 of the memorandum, you say, 'I said moral questions, questions of the utter frightfulness of this weapon, questions of again seeking international control -- all are relevant but none seem to me the central questions.'

"What did you mean by moral questions?

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"A. The question of the effect in a cold war sense or a psychological war sense of engaging in a program of bombs of unlimited size on the views of the United States taken by friendly or by now friendly countries. The moral position of the country, I suppose, is a short way of putting it. This was relevant, but I didn't think it was central.

"Q. You did in this memorandum, Mr. Lillenthal, take issue with the military judgment of the Joint Chiefs of Staff, didn't you?

"A. I certainly did.

"Q. Did you consider yourself to be qualified to do that?

"A. No, I considered I had to express my independent view that we were in a weakened condition based on General Bradley's statement. May I quote the essence of what he said to us which he said publicly in November 1950. This is by no means critical of General Bradley. I am just indicating the shock it gave me. He said, 'It is a bruising and shocking fact that when we Americans were committed in Korea we were left without military strength with which to face any enemy at any other specific point. Certainly we were left without the strength to meet a general attack. In the military sense the free world was left without adequate reserves except for the atom bomb.'

"When General Bradley said that to us upon questioning, it seemed to me important as a public servant and a layman to express great consternation and concern that this country was in that condition and that something effective should be done about it, even though that involved changing the economy program and redrafting of men. This was in, as you recall, or these meetings were in the end of January 1950. The 25th of June the Korean war broke out, and we then found the condition we were in. I don't have any notion that I have military judgment,

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but I have a feeling that when the Chairman of the Joint Chiefs of Staff makes a statement of that kind in a proceeding in which I have been asked by the President to express my honest opinion, I have to express the opinion of great concern.

"DR. EVANS: Did he make that statement publicly in Chicago?

"THE WITNESS: He did make that in November, 1950, to the Executives Club.

"BY MR. ROBB:

"Q. Was there any question at the time you had this meeting that the Joint Chiefs of Staff wanted to go ahead with the H bomb program?

"A. Yes. At the time of this meeting late in January the Defense Establishment, speaking through Secretary Johnson and presumably representing the views of the Joint Chiefs of Staff, did want to go ahead with the crash program on the H bomb. It was my unpleasant duty, since the President asked me to express my honest opinion, I said I thought until we got our whole situation in order, this was an unwise course.

"Q. May I ask you, sir, do you have any further comment on this memorandum before we go into so-called open session?

"A. Just one, and it may be off the record. As I hear this read over the gap of four years, it sounds pretty pretentious. But this is the situation when one is asked to explain his opinion as a layman by the President of the United States, he has to express the views he has. It does sound as if I was setting my judgment up against the judgment of other people. I have no apologies to offer for that except that was the pickle the President put me in putting me on this

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committee. I must say if the question is, was the decision at the time wise or not, I don't know. I am not a sufficient dogmatist to say that the decision that was taken was wrong. I am not a sufficient dogmatist to say today that my view point was right. But this is the way it looked to me then.

"MR. GRAY: I have just one question which perhaps can be asked when counsel for Dr. Oppenheimer returns, but it is suggested by something in this memorandum. I guess this is in the President's statement. This section C or the proposed statement. This is on the first page. That is the President direct certain things to be done 'in the light of the probable fission bomb capability and possible thermonuclear bomb capability of the Soviet Union.'

"Perhaps I can just expose this and then we can discuss that later on. I will want to ask a question later on about your views as to the possible thermonuclear bomb capabilities of Soviet Union. I suppose we can do that without reference to this memorandum. In other words, you have discussed this aside from anything that took place in this meeting, is that correct?

"THE WITNESS: Yes.

"DR. OPPENHEIMER: Since my counsel is absent, may I ask one question of the witness?

"MR. GRAY: Yes.

"DR. OPPENHEIMER: Do you recall General Bradley's comments at the joint meeting of the General Advisory Committee on October 29th?

"THE WITNESS: I have a recollection of a comment he made.

"DR. OPPENHEIMER: Well, counsel is back. It is relevant to what we have been talking about.

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"MR. GRAY: You may answer that.

"MR. ROBB: When counsel come back, you can ask them that question.

"DR. OPPENHEIMER: It was in the substance of his comment, and I am not sure that can't be answered.

"(Discussion off the record.)

'(End of classified section of Lilienthal testimony.)

420
27th from top

After the words, an all-important matter, add:
"namely, the crisis in the Mediterranean."

1395

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Wednesday, April 21, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer; Lloyd K. Garrison; Samuel J. Silverman; Allen B. Ecker, counsel for J. Robert Oppenheimer; and Herbert S. Marks, counsel for J. Robert Oppenheimer.

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433
17th from bottom

After the words, 2 or 3 months later, add:
"was, yes, pretty close to a crash program, in that as you may remember -- I don't think this is classified -- it"

1430

435
3rd from top

After the words, I don't remember. add (two paragraphs):

1435

"I will say this: That we were accustomed to seeing foul ups over in the military to the point where they could not agree with what they wanted. We were accustomed of knowing all the disagreements between the services.

"I remember on this hydrogen bomb thing telling Secretary Johnson that we were getting very impatient with their waiting so long to come to decisions; that we could expect to have things done, and we expected to be doing them while they were messing around with their papers over at the Pentagon. But he seemed a little miffed, although he was well aware when things went up to the Joint Chiefs they went round and round and round until somebody gave them a jolt."

435
17th from bottom

After the words, on a crash program. add:
"This was a thing involving, as I remember it, at least a couple of billion dollars."

1438

436
15th from top

After the words, security point. add:
"The first military appraisal I saw indicated that there were not very many targets on which they thought such a big bomb would be required. There were some. "

1439
&
1440

438
7th from top

After the words, that had come up. add (new paragraph):

1446

"Let me give you an example on the security thing in looking back. I think it was in March, 1946 as it turned out later, there was a series of petty

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thefts out of Los Alamos of photographs, of models of bomb cores, of documents and it looked as if at that time morale must have sunk to an incredible low, particularly in the Armed Services. This is when they were trying to demobilize. Operation Magic Carpet had just been over. There was a terrible period for physical and personnel security and morale that my guess would be got to its worse in late March, 1946, and then it seemed to be better or these crazy idiots were out of the program."

440
12th from bottom

After the words, substituted for it. add:
"I am actually also supposed to be today, and yesterday as well as attending a meeting of the Knothole Committee of the United States Army on Combat Preparedness and various other more minor things.

1455

442
16th from top

After the words, was being described add:
"with the probability that it would take a most fantastic airplane to carry it."

1460

443
17th from top

After the words, policy discussions. add:
"This is an air defense continental defense laboratory of all the services, but particularly the Air Force, under contract to the Massachusetts Institute of Technology."

1464

443
21st from top

After the words, of the United States add:
"most of which I gather in one form or another at least are now being adopted by the armed services."

1464

446
7th from bottom

After the words, Armament Panel. add:
"Until about a year or so ago when there was established also an Atomic Energy Panel of the Air Force, it was the Armament Panel that had the scientific advising responsibilities within the Air Force on atomic bombs, not atomic propulsion."

1476

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447

7th from top

After the words dismal proposition add:
"It takes a much longer time to develop an airplane than it does at our present rates to develop new bombs. It looked as if not only a new airplane but a rather fantastic airplane had to be developed."

1477

447

11th from top

After the words, policy was yes, add:
"but with considerable dissent within it, and would not surprise me if you could produce a record which said the Air Force said it didn't. 'there was just a lot of dissent in the Air Force.'

1477

447

14th from top

After the word, operated, add:
"it was such an argument of people saying what a sitting duck an airplane of this nature would be on the one hand, to people saying it is a super, it is a hooper on the other."

1477

447

31st from top

After the words, important thing. add
"I would say dominantly during almost the entire time I have had to do with it, the official position of the Air Force has always been very strongly in favor of the strategic concept.

1478

1479

1480

"The Scientific Advisory Board, of which I am a member is much less certain on this matter. It has many more reservations that this is enough."

447

17th from bottom

After the words, ground forces. add:
"The problem was from the Air Force point of view how can you support ground troops and again what fraction of your money should go to that kind of a weapon. The all out strategic people would argue that the only way to do is by strategic bombing, and don't waste your money on tactical support."

1480

1481

447

13th from bottom

After the words, continental defense, add:
"Again what fraction of your money should you spend to shoot down airplanes that are attacking

1481

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this country, and what fraction should you spend in retaliation with your own strategic weapon. My own feeling is that you need to do both."

448
11th from top

After the words, also favor, add:
"namely, that to defend the country, if you put all the eggs in one basket and the enemy country -- Korea was a good lesson of this -- we were actually relying, I should say, a little too heavily on some of the strategic and not enough on the tactical, and we were suddenly confronted with the situation where it was decided not to use the all out strategic weapons."

1482

448
14th from top

Immediately following line 14, insert the following after the words the whole thing :
"Q. Did you have anything to do with the long range detection business?

1483

"A. Only after it was invented. They tried to get me on the summer project, but my wife and I were scheduled to go on a trip to Europe, and I am afraid we went, and I didn't help very much on that. I think they originated some very important ideas on that."

448
20th from top

After the words, Yes, sir. add:
"He was on the summer study group that invited that. I don't know who invented what. Certainly the net product was very important. I have discussed it subsequently and he thinks it is important and advocated strongly that it be invented."

1483

448
25th from top

After the words being underdeveloped add:
"There had now been invented some techniques which would be of a vast aid in this which were simply not thought of before."

1484

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455
7th from bottom

After the words, talk for anybody add:
"I had the sort of discouraged feeling that they were not very well briefed on the whole question of atomic weapons and their military utility. There was a very great pity. If they had been very well briefed on that we would have been where we are now three or four years ago.

1509

"MR. ROBB: Three or four years what?

"THE WITNESS: Three or four years ago. That is the general feeling I got out of it."

456
7th from the bottom

Immediately following line 7 from the bottom of the page insert the following questions and answers, following the words, policy of containment:

1512
1513

"Q. When was that?

"A. I specifically was worried about the whole thing from 1947 on when we started to get a tough policy with Russia with a minuscule stockpile and if our bluff were called, what would we do? I felt all along if we are going to have a get tough policy, we have to have something to back it up.

"Q. Did you and Dr. Oppenheimer disagree about that?

"A. No, oh, no. We were worried sick about that particular situation. We were also worried about the situation that the military did not know the meaning of these weapons and somehow or other had a fixed idea that these necessarily were -- they could not be made to realize or did not realize, there was some kind of breakdown in communication, that all they had to do was to put the money on the line and order it, and this would come out. There were very many important military uses. So when the Savannah River project came along --

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"Q. When was that?

"A. The date of Savannah River, I can't recall.

"Q. That would have been some time in 1950?

"A. I don't know. I can't put a date on it. But it was extremely welcome.

"Q. You say that you began to experience these worries about talking tough and not having a big stick in 1947. Did the GAC try to do anything about that, or did you feel you had any responsibility to do something about it?

"A. Yes, we did talk to the Commission about it, I think. I am not quite sure we did. I think at our first or second meeting, whether it is in the record or not or in the minutes, I am not sure, I know I myself kept on saying what we have to do is to quintuple Hanford."

458
30th from top

After the words, head of the, add:
"Hartwell Project."

1518

458
30th from top

After the words, for the Navy, add:
"which had a large effect on naval policy on antisubmarine warfare, and things of that sort."

1518

458
31st from top

After the words, are not mistaken add:
"about the Hartwell business?"

1519

458
10th from bottom

After the words, effective than it is add:
", and also I would like to see its bases better protected than they are."

1520

462
15th from top

After the words, was General Bradley add (new paragraphs):

1531

"Q. You said your impression was that General Bradley was not very well briefed.

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"A. On atomic energy, that is right."

462
24th from top

After the words, it was then. add: 1532
"Q. I have a note here and I think I wrote down your exact language: 'If they had been well briefed, we would have been where we are now three or four years ago.' Could you explain that to us?"
"A. Sure. If they had been well briefed and understood what atomic weapons meant in the whole thing, the sort of thing that the new look is talking about, we would have put up the kind of factories which we have at Paducah and we are setting up in Iowa and at Savannah River, and the increase in facilities in Hanford and so on, and we would have gone to town and spent the kind of money earlier that we spent later. That is what I mean."

462
29th from top

After the words, Yes, sir, everything. add: 1533
"You can design so that the materials which enter are more or less interchangeable. You can do that with that in mind. In fact, that is what was done."

462
40th from top

After the words, extremely promising, add: 1533
"A. Not discovery; invention."
Immediately before words, was there any discussion, add:
"Q. Invention, yes, sir."

467
9th from bottom

After the word something, add: 1551
"If Fuchs transmitted the information they have essentially the object which we were talking about in 1949. So they have a start, and if they can reconstruct our line of thinking, it is almost inevitable they will get it. I don't mind telling you gentlemen I am very, very deeply concerned."

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468
4th from bottom

After the words series of it, add: "and we
have a whole series of Super bombs"

1554

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Thursday, April 22, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the Board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Mr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman; and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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Page and Line No. U.S. GPO copy; 1954	<u>Remarks</u>	Page No. Classified <u>Copy</u>
484 28th from bottom	After the words <u>definition of it.</u> Add (new paragraph): "Dr. Nordheim was also specifically interested in a definite type of thermonuclear system, and made very definite contributions to the potential design of such systems."	1597
487 31st from top	After the words <u>to be successful.</u> Add: "and we would not have made the relevant progress which would have been required in the fission field."	1606
492 4th from bottom	After the words <u>fission bombs.</u> Add: "Thirdly, we would not have been able to make use of it practically because we would not have had the comparable skills, let us say, to make fission bombs whose characteristics would be appropriate to this sort of a system. Of course, by that I am implying that there are certain relationships between these things, and that will have to be a part of this argument."	1625
497 22nd from bottom	After <u>A.</u> Add: "In Russia."	1642
503 18th from bottom	After the words <u>increased in numbers.</u> Add: "as against what we supposed to be the current plans on the production schedule. "Q. You mean the current plans with respect to the proportion which should be assigned to the Strategic Air Command. "A. As I recall it, the nature of the proposal was to considerably increase the amount available for the smaller weapons -- my recollection is weak on this -- but I don't think it seriously or greatly changed the amount available for the big weapons. I may be wrong on that.	1661 & 1662

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"Let me point out that the technology was developing at that stage to the point where it became possible to make these weapons with a much smaller amount of fissionable material than had previously been regarded as necessary."

504
2nd from top

After the words military strength. Add:

1663

"He was quite convinced, as was I, that the Department of Defense had not yet realized what the potentialities of the atomic weapon were, and hence were riding the initial horse of nothing but the strategic air use of the weapon, and failing to capitalize on other uses, specifically in this case the uses in the possible defense of Western Europe.

"Q. Did he express any opinion as to any announcement with respect to the strategic bombing of Russia?

"A. We discussed the question of whether an announcement in terms of the strategic bombing of Russia would be desirable or undesirable. I think we all reached the conclusion that anything which implied any hesitancy on the part of the United States about being willing to retaliate with the atomic bomb would be disastrous. That the enemy must have no question or no feeling that there was a question in the minds of the United States about the willingness to retaliate.

"Q. When you say 'we', whom do you mean?

"A. I mean the four of us."

504

Immediately following line 11 delete line of * * * 's and insert the following:

1664

"Q. What was yours?

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504 "A. My view was that we must give no intimation to Russia that we would hesitate to retaliate with the strategic bombing" 1667

506 After last line on page delete stars and add: 1671
8th from top "Q. Now will you go ahead and tell us what they said about it?"
9th from top "A. Yes. They were quite disturbed that the effect of the presentation of atomic weapons in the tactical picture would react unfavorably upon the strategic air force which -- no, I will try to give you what they said -- on the strategic air force and its mission to knock out Russia."

507 After the words to appraise this and. Add: 1674
the following: "biological warfare and chemical warfare."
&
1675
After the words responsible there. Add: "and every time the answer came up that while we had the gun pointed at Russia's heart, Russia now has it as well pointed at our heart. Either one can put it through to knock the other fellow out."

"Q. Dr. Whitman, if you can answer this in the presence of people who are not cleared to receive classified information, would you say whether the military is now following the policy of the broad use of atomic weapons pretty much as you stated Dr. Oppenheimer's views to be?"

"A. As of the time when I left the Defense Department last summer, there was great progress in that direction. I can't speak beyond that, the 31st of July 1953.

"Q. Was that true in connection with the defense of Europe, too, again if you can say it?"

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See Vol IX as
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	"A. Yes. Of course, we are also, or they were actually seriously considering the use of the atomic weapon in our own air defense here in this continent."	
510 5th from bottom	After the word <u>destructiveness</u> . Add (new paragraph):	1688
	"A. I believe that to be true. Whether it was portable at that time or not is another question."	
511 18th from bottom	After the words <u>among the population</u> . Add: (new paragraphs):	1690 & 1691
	"Q. Do you think you know in a general way what is going on in Guatemala and how the Communists are manipulating affairs there?"	
	"A. Yes. You will find that there are very, very few, if any, in elective office. They are always appointed, and they are in the policy positions only. Not often are the presidents of the countries Communist or Communistically inclined until they are in so deep that they can't get out of it."	
	"DR. EVANS: Would you say that again?"	
	"THE WITNESS: None of the countries with which I am familiar are any of the out and out Communists that report to the Internationale in Moscow ever elected to office. They don't run for office except very, very seldom. In Guatemala especially there is not a one of them that is in an elective office. They get themselves appointed to policy control officers lower down than the Congress. You will find them appointed as judges very frequently. So that they can control the judicial and also the labor."	
514 4th from top	After the words <u>Government officials</u> . Add: "in these countries which have now become Communistic."	1699

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<u>Page and Line No.</u> <u>U.S. GPO copy; 1954</u>	<u>Remarks</u>	<u>Page No.</u> <u>Classified</u> <u>Copy</u>
519 28th from top	After the words <u>being considered</u> , was. Add: "a design which it was not clear would be operable. At least it was."	1716
521 21st from top	After the words <u>and the Army</u> . Add: "particularly the collaboration between the Air Force and the Army in tactical air operations. It was broadened to include the general operations of the Army and Air Force problems."	1723
521 28th from top	After the words <u>Institute staff</u> . Add: "to examine the use of atomic weapons in Army and Air operations and had made substantial progress in their thinking about the tactical uses of them.	1723 & 1724
	"This was on the potential battle of Western Europe. In order to make our problem definite, we examined what might happen in Western Europe in case of a Russian invasion into that area and what weapons and techniques the Army, Navy and Air Force could use in combating such an invasion.	
	"One group, as I say, under Dr. Bacher had the special responsibility in asking to what extent and in what way and under what conditions would atomic weapons be useful in such a battle. By the end of the summer a fairly complete chapter of our final report had been prepared on the subject.	
521 5th from bottom	After the words <u>their problems</u> . Add: "with tanks, mines and the possible maneuvers which they would undergo to avoid atomic attacks by the Russians, the ways in which they would try to focus and funnel and channel an enemy attack so that it would be a good atomic target, the problems which the Army faced in laying mine fields, and so on."	1726
522 5th from top	After the words <u>of our discussions</u> . Add: "Q. To what extent, if you know, and if you don't, tell us, have the recommendations of the Vista Report been put into effect?"	1726, 1727, 1728 & 1729

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"A. To what extent have they been?

"Q. Yes.

"A. It is rather interesting that Dr. Lauritsen is at this moment engaged with a committee which has been established at the request of the Chief of Staff of the Army to examine into this question of how effectively the Army is implementing the recommendations of the Vista Report. He is now visiting Fort Monroe and Fort Bragg, I believe, in an attempt to find out, which of the Vista Report recommendations are being implemented and how effectively. A report is to be made to the Chief of Staff of the Army on this subject within the next two weeks.

"Q. In general has there been a movement toward the equipment of the forces in Western Europe with atomic weapons?

"A. I think in the field of atomic weapons the Vista Report was one of the first reports strongly to emphasize the potential importance of atomic weapons in tactical air operations. There had been many in the Army and in the Air Force who advocated the use of atomic weapons for this purpose and a number of officers discussed the use of atomic weapons with the members of the Vista staff. We became convinced that atomic weapons were available and more of different varieties would be available in the future small enough to be carried by small aircraft, and therefore useable in tactical operations, close-in operations against enemy tactical installations, troop concentrations, tank columns, supply dumps, tactical air fields, and so on.

"We strongly advocated that the Air Force and the Army examine more carefully this potentiality of using the smaller type of atomic weapon, smaller in physical dimension, as well as in yield, for these tactical air operations. We were not allowed to say in the report how much fissionable material the

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United States possessed at that time, though some members of our group knew. We were therefore not able to illustrate quantitatively the argument which we felt was sound, that the time had approached or would soon be here when there was sufficient fissionable material so that the strategic needs could be met and also material be made available for tactical uses. That time is certainly here now.

"We felt that it was here in 1951, at least when plans should be made for using some of our supply of fissionable materials in tactical operations. This was one of the features of our report, that is, advocating in some detail how it could be done, and under what conditions and how must economically and effectively our fissionable material could be used in assisting in the defense of Western Europe.

"Q. Without going into details and without touching upon classified material, have those recommendations been carried out to any extent?

"A. To the best of my knowledge, and I am not fully aware of the present plans -- I will be in Paris again next week and may find out more about it -- the idea of the tactical use of atomic weapons has now long been accepted as an important and essential tactical idea and operation. I believe that the Vista Report had some influence on this. Whether it did or nor, at least by now tactical air operation with the use of atomic weapons is an accepted technique and doctrine.

527
21st from top

After the words insofar as the. Add: "tactical." 1746

527
30th from top

After the words Brief recess. Add the following: 1747 -
1758

"CLASSIFIED PORTION OF DR. DuBRIDGE's TESTIMONY

"MR. GRAY: Mr. Reporter, would you have the record show that at this point when it became necessary to

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question the witness about classified matters, Mr. Garrison and the others were excused. The record should show that Dr. Oppenheimer remains.

"(Whereupon, counsel for Dr. Oppenheimer withdrew from the hearing room.)

"BY MR. ROBB:

"Q. Doctor, I want to read you three paragraphs and ask you whether or not they state in substance the salient points of the introduction to the VISTA report.

"A. Is it proper, Mr. Chairman, for me now to ask what document the counsel is reading from?

"Q. I am sorry, but even now I cannot disclose what the document is, sir, and under the circumstances which we have it.

"A. Can you tell me from whose statement you are quoting?

"Q. I am told I can't do that either, Doctor.

"MR. ROLANDER: That is correct.

"BY MR. ROBB:

"Q. I am going to read you the three paragraphs, Doctor, and ask you whether or not they state in substance the salient points of the introduction to the VISTA report which you have testified Dr. Oppenheimer helped to prepare.

"A. May I say I assume you mean the introduction to Chapter 5 of the VISTA report?

"Q. Yes,

'1. The available stockpile of atomic weapons should be divided into three equal parts (equal

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from the point of view of available fissionable materials). One part should be held in reserve, one part should be assigned to SAC, and the third part should be assigned to the tactical defense of Europe in accordance with the VISTA recommendations. Appropriate re-working of existing weapons should be begun at once.

'2. The U. S. should announce that no strategic atomic attack would be directed against Russia unless such an attack were first started by Russia either against ZI (which, I guess, means Zone of Interior) or against European Allies.

'3. At the present state of the art, the value of thermo-nuclear weapons cannot be assessed. Therefore, they are not included in the VISTA study.'

"Would like me to read any of those again, Doctor?"

"A. I may ask you to read them again, but I think I can make some comments.

"Q. Do you want to take them up one at a time?"

"A. Yes. Number 1: It was our suggestion in the report that the fissionable material stockpile be divided into three parts and we suggested rather generally that possibly an equal division would be suitable. I think we did not make it accurately equal. That a certain segment of the stockpile should be assigned to strategic air operation, a certain segment to tactical and a certain segment held in reserve to see how the war went and assigned them as the battle progressed.

"We said that it is possible that three equal parts would be proper. In other words, without certifying to the particular words you read, the general idea of three parts of our stockpile was recommended by the VISTA project.

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"As to the second, I do not recall that we made any such recommendation, although, of course, this is a matter that the record of the final VISTA report would show.

"Q. Excuse me, Doctor, I was not asking about your recommendation. I was asking whether or not that was in the introduction which you had in November which was prepared with the assistance of Dr. Oppenheimer?

"A. I see. You are not asking whether this was in the final VISTA report, but in an intermediary version of the report.

"Q. Yes, sir.

"A. Since there were many intermediate versions, it is hard for me to swear as to what any one of them said. But I do not recall any such recommendation ever being proposed that we should announce anything about our strategic intentions relative to an attack on Russia.

"We were specifically not supposed to examine strategic air warfare problems in the VISTA stage. But since this question of the possible use of fissionable materials for tactical situations came up we had to make some suggestions that tactical as well as strategic operations were useful for military purposes.

"I do recall that the final version of the report --

"Q. Excuse me, but would you confine yourself to the draft for the time being. I don't want to cut you off in any way, however.

"A. Yes. I can recall of no such specific recommendation ever being included in a version of the report.

"Q. Whether it was this specific recommendation or not, was there anything comparable to this that you recall?

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"A. That is what I was trying to get at. This statement reminds me of a statement which was in the report, namely, we recognized the possibility that at the outbreak of a war we, The United States, would decide not to initiate instantly a strategic attack on the USSR, and that in that case we might still want to use atomic weapons on the battle field.

"Certainly the report at various stages did have a suggestion of this sort in it -- that there might be a situation which would arise in which we would withhold a strategic attack.

"Q. Was that in the final report?

"A. That was in the final report and in the intervening ones, too, I think, or something similar to it.

"Q. Now, the third suggestion.

"A. Our point of view throughout the VISTA study on thermo-nuclear weapons was that we did not see that they had tactical value. We made no comment on their importance as strategic weapons. But we did say that in as much as we see at the present time, no tactical usefulness to thermo-nuclear weapons, we will not further discuss them.

"Q. Then this 'third' is about right.

"A. Except for the very important word 'tactical'. We did not see these thermo-nuclear weapons being used on the battle field and we made no comment on their strategic use.

"May I explain that point a bit.

"Q. Yes, sir.

"A. We were envisioning a battle in Western Europe, presumably an invasion by Russian armies of Western

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Europe, and that we would be forced then into a battle of the NATO armies against the RUSSIAN armies in Western Europe between the Rhine and the border of the Soviet Zone.

"We looked at the question of atomic weapons being used on armies in that area. We felt that if a thermo-nuclear weapons was available and used on armies, that its area of destruction through blast and its area of damage through radio activity would be so great that we would be destroying many civilian populations in a friendly area -- Western Germany -- to such a great extent that the use of such a terribly destructive weapon in Western Germany was not feasible and not desirable and would be against our interests.

"Therefore, we saw no tactical use for it in that kind of a battle. Therefore, we made no further study of the thermo-nuclear problem in that report.

"Q. I see. Was it then that particular point that General Quesada wish to present some information to you gentlemen?

"A. General Quesada did not address himself to that particular point, as I recall. He may have agreed with it. I don't recall that he disagreed with it.

"Q. Doctor, I have before me a paper which is marked, 'Extracts from VISTA report, Introduction to Chapter 5, Atomic Warfare', which, I assume, is the final draft. I am going to hand it to you in just a moment.

"I notice in here at the top of page 2 the sentence, 'We have a prospect, probable but not certain, of a thermonuclear system in the range of many megatons that may be available within two years although cost, characteristics and utility cannot today be estimated.'

"I will hand you this and ask you if you would please, sir, give your comments on the one sentence I read or anything else you want to talk about.

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"MR. GRAY: Does that purport to be the final report?

"MR. ROBB: That is what I understand. Perhaps Dr. DuBridge could help us on that. It just came to me, Mr. Chairman, at noon today.

"THE WITNESS: I cannot swear that I know this is a true copy of the final report. I do recognize it as being very similar to the final version.

"I would like to note that the sentence which you read was at the end of several paragraphs which stated that the fissionable material resources of the U. S. were growing at a very large rate and that 'We have a resource of great magnitude and that even in the near future we can contemplate many military applications and a wide variety of targets and target systems', and then it goes on to describe a number of different warheads available in the fission weapon ranging from 1 to 500 kilotons. Then it goes on to describe the various sizes and diameters of such fission weapons and stating how the fissionable material supply is increasing and also design improvements are increasing our stockpile.

"As one element in this picture of our atomic weapon arsenal, we say that we have this prospect, probable but not certain, of a thermonuclear weapon in the range of many megatons that may be available in two years, although cost, characteristics and utility cannot today be estimated.

"It seems to me that that was a statement at that time of a fact or a possibility and I think it was a correct statement at the time -- that there was probable but not certain a thermo-nuclear system in the range of many megatons and that the cost, characteristics and utility could not then be estimated.

"BY MR. ROBB:

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"Q. I had the idea from some of the testimony here that in the spring of 1951 there was a discovery made which made the production of a thermo-nuclear weapon certain. Am I mistaken about that?

"A. Certainty in a new field does not occur until one has the final test made. There was no stage at which certainty came until the tests were successful. At this time there was no test which had shown a yield of many megatons. I think it could not be certain at that time that a many megaton yield was available. It is correct to say that there was a prospect, but not certainty.

"Q. What sort of tests had been made at that time, Doctor?

"A. This was the latter part of 1951. The final report went in the early part of 1952. There was just the one so-called GREENHOUSE test. I do not recall the exact characteristics of that test.

"Q. Was some kind of a thermo-nuclear gadget tested?

"A. The answer is that there were some tests. I personally did not familiarize myself with the details of the thermo-nuclear tests at that time because of what was previously said, that it did not seem to be an essential part of our VISTA study.

"It does seem to me, Mr. Chairman, that it is perfectly true that there was a very complex technical situation in the laboratory and in the test which developed from 1946 even right up until the present day.

"The technical problems associated with the developments cannot be discussed in public because they are highly classified, but these developments have been very complex and at each stage there have, of course, been differences of opinion as to the best technical approach and the possible prospects of success and the degree to which success would be achieved and

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how soon it would be achieved and what the costs would be.

"It seems to me that in a new technical field of this sort, differences of opinions, exchanges of ideas are essential, inevitable and desirable. And to interpret any such differences of opinion or statements made during the process as evidence of a lack of integrity or loyalty to the United States is quite unwarranted.

"Q. I was not attempting to interpret anything. I was trying to find out what happened.

"A. The purpose of this inquiry, however, is to inquire into the loyalty of an individual. I only want to make it clear that my position is that technical differences of opinion are desirable parts of the development of any new device and progress in any direction in the field of science and technology.

"Q. Did Dr. Clark Milliken dispute the conclusions expressed in the draft that you read there?

"A. In this (indicating)?

"Q. No, sir; the draft that you read in November, 1951, at the meeting in Pasadena?

"A. Possibly. Many people argued about it. The VISTA study was a study in which all possible ideas were stated, explored, inquired into, argued about, disagreed about. There were many points of argument. When we finally got our final report written, it was, I think, unanimously agreed to. I cannot recall the nature and precise timing of the many discussions and disagreements that went on in the process.

"Q. I can well understand that.

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"MR. ROBB: Mr. Chairman, that is all the questions I can ask about this particular subject. Does the Board wish to ask any questions? If Dr. Oppenheimer has any questions, I would be very glad to help him phrase them, if he wants any help.

"MR. GRAY: I think I have no questions about this particular matter. Do you, Dr. Evans?

"DR. EVANS: No.

"MR. GRAY: Mr. Morgan?

"MR. MORGAN: No.

"MR. GRAY: Dr. Oppenheimer?

"DR. OPPENHEIMER: Do you remember the views of General Quesada and Mr. McCone of the rough drafts of Chapter 5 of VISTA?

"THE WITNESS: Yes, very clearly. We presented to both General Quesada and John McCone --

"MR. GRAY: 'We' being who?

"THE WITNESS: We being members of the VISTA group. I was present at the sessions. There were several; Dr. Oppenheimer was present at some, Dr. Lauritsen, Dr. Bacher, Dr. Christie were present at various sessions with McCone and Quesada.

"I remember very clearly that both McCone and Quesada expressed rather enthusiastically their agreement with the approach of Chapter 5 and its introduction. They felt that this was a proper, useful and desirable approach to the subject, and they expressed agreement with it.

"MR. GRAY: This was Chapter 5 substantially as it finally appeared?

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"THE WITNESS: It was an intermediate version at that time, but the ideas were substantially as in the final version.

"DR. OPPENHEIMER: I don't think I should pretend to be counsel, If we are going off the top secret section. I will have counsel back.

"MR. GRAY: Yes.

"MR. ROLANDER: As a security matter, it is your testimony and you consider it to be top secret. You are familiar with this project?

"THE WITNESS: That is true. I would not attempt to decide which sentences I uttered should be classified.

"MR. ROLANDER: Until this is reviewed, I would like the reporter to consider this classified as top secret.

"(Whereupon, counsel for Dr. Oppenheimer entered the hearing room.)"

530
7th from top

After the words means independent. Add: "that a thermonuclear explosion is quite impossible without an extremely effective and large fission explosion initiating it."

1767

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Friday, April 23, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward V. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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564
5th from bottom

After the word information. Add: "Moreover, since that occurred, Mr. Chairman, there has been a discussion in the press in this country which in my opinion has been infernal speculation, guessing, prying, the reporting of this technical feature and what, which has performed for the Russians so much that I can't understand why they need any spy network in this country. We deliver it to them on a platter. If that didn't aid them, I would like to know what would."

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Monday, April 26, 1954

The above entitled matter came on for hearing pursuant to recess before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer; Lloyd K. Garrison; Samuel J. Silverman; and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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578 29th from bottom	After the words <u>Pacific war</u> . Add: "Ultimately they were made by the <u>millions</u> . At the end of the war, the total budget in the Navy for rockets was a million dollars a month, I understand."	2012 & 2013
582 31st from bottom	After the words <u>Hartwell project</u> . Add: "It was a contract between the Navy and the Massachusetts Institute of Technology. The purpose of it was to study possible improvements in submarine warfare -- that is, antisubmarine warfare."	2026
582 23rd from bottom	After the word <u>Charles</u> . Add: "This was also a Massachusetts Institute study."	2026
582 22nd from bottom	After the word <u>Laboratory</u> . Add: "which now is considered the most important establishment in this country for the Air Force program in continental defense."	2026
582 20th from bottom	After the words <u>the Vista study</u> . Add: "The purpose of that was to see if methods and tactics and weapons could be devised that would make it possible to hold in Western Europe, rather than to abandon if the Russians should decide to invade Western Europe. The Assignment we had was ground and air combat."	2027
583 11th from bottom	After the words <u>Vista study</u> . Add: "namely, the objectives of discouraging the Russians from trying to occupy Western Europe, and at least make sure that they cannot win Western Europe by military means without serious destruction. "Q. Without serious destruction to whom? "A. To property and equipment. We believe that the greatest danger would be if they could somehow occupy Western Europe intact as it were."	2031
583 7th from bottom	After the words <u>World War II</u> . Add: "to determine where we should try to hold a line, to what extent we could make preparations ahead of time with such things as demolitions and land mines and weapons that	2031

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were placed in position ahead of time and dis-positions of ground forces. In particular, since our problem was ground and air combat --

"Q. You are speaking of Vista now?

"A. Of Vista. How we could get more effective cooperation, more effective assistance from the Air Force, so that the armies could hold, or at least so that they would go backwards as slowly as possible."

584
19th from top

After the words ideas on. Add: "the specific subject of how to use tactical atomic weapons in connection with supporting ground operations. This was".

2033

584
28th from bottom

After the words we felt that. Add: "the stockpile was rapidly getting sufficiently large so that".

2034

584
last line

After the words essential idea. Add: "of using atomic weapons for supporting our ground troops and making it possible to hold as far forward as possible."

2035

585
12th from top

After the word weather. Add: "This included specifically developments of weapons and tactics that could be employed at very low altitudes. Up until that time it was not possible to deliver a weapon at low altitude because you would blow yourself up if you tried to do so. So one of the essential requirements was to get a weapon that you could deliver at low altitude in bad weather with high accuracy."

2036

585
33rd from top

After the words ground operations. Add: "For making it possible to operate an army in Western Europe and to resist aggression in Western Europe. One plan in this was to develop weapons specifically for destroying the Russian Air Force on the ground. The second was to destroy mass attacks which as we have learned by sad experience we have no way of resisting. If we could force these concentrations

2037 &
2038

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and then strike them with appropriate atomic weapons, we believed a breakthrough would be very difficult. In fact, it might not be attempted.

585
28th from bottom

After the words tactical use. Add: "-- the attack on Russia -- by tactical use, I mean primarily hitting enemy concentrations in your immediate front, mass concentrations."

2038

585
25th from bottom

After the words more true now. Add: "since our stockpile has increased enormously."

585
21st from bottom

After the word weather. Add: "from any altitude, including very low altitude."

585
8th from bottom

After the words striking us. Add: "with the same kind of weapons that we were planning to use in our strategic attack on Russia."

2039

585
4th from bottom

After the words principal cities. Add: "This was the purpose of the Charles study."

585
last line

After the words 1950 or 1951. Add: "It was the first study on air defense. There had been previous study by a panel of the scientific advisory board in the Air Force, and there was a project going on improving some of the radar stations in this country. This was going on at the time of the Charles study was started. The Charles study concluded that this was a very sound effort, but utterly inadequate because they are already here when these radar stations pick them up. They were primarily for the purpose of organizing our interceptors. We felt that the warning should be pushed out as far as possible in order to make better use of our interceptors and to concentrate them where the attack was going to come, and also in order to make possible some sort of civilian defense, which is hopeless without some warning. So our purpose was to get at least an hour or two warning while under the old system you had no warning."

2040

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591

Delete line of ****'s and insert the following:

2057

"Q. When was the feasibility of hydrogen weapons established?

"A. I have no knowledge that it has been established yet.

"Q. You mean you still don't know that they will work?

"A. I do not know, no. I know about subsequent developments on certain thermonuclear devices.

"Q. Wasn't there a test of a hydrogen weapon? Haven't there been tests of hydrogen weapons?

"A. I think that is questionable, but perhaps not a good subject for discussion here.

"MR. GRAY: You mean from the point of view of security?

"THE WITNESS: That is right.

"MR. GRAY: Do you want to pursue this?

"MR. ROBB: Perhaps I might finish up other matters first."

594

Delete line of ****'s and insert in lieu thereof:

2069 &
2070

"A. I do not remember the exact wording, but I know that my feeling was that the important thing was to strike immediately against their tactical airfields and the immediate military targets that could attack our field forces. This had to be done within a matter of hours after hostilities, while the long range strategic operations could at best be days, and that the immediacy of the attack was not nearly as important as in the case of the ground forces."

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595
9th from bottom

Remarks

2073

Delete line of ****'s above line 9 from bottom, and after the words have to say so. Add (the following new paragraphs):

"The question is: Is there any difference in your thinking between what is described as an H bomb and what is described as thermonuclear weapons and devices?

"A. I think it is clear from the way I answered these questions that there is, but the explanation of it, I think, is classified with a very high degree of classification. It involves technical details that could only be considered of a high degree of classification.

"Q. Let me ask another question that I think will not involve or that may not involve any classified information:

"Is it fair to conclude from what you have just said that you might have held one kind of a view with respect to thermonuclear devices and thermonuclear weapons and a quite different view with respect to a hydrogen bomb?"

595
last line

Last line, delete ****'s, and after the words thermonuclear weapons. Add: "This, I think is very different from a crash program on a hydrogen bomb. Such a crash program I believe would interfere seriously with other things that we needed very badly if we were to carry out the mission that was assigned to Vista. If our total effort in this field went into a crash program on hydrogen bombs, starting in 1950, I believe it would seriously interfere with things that we needed urgently.

2074

597
9th from top

After the words which I directed. Add: "a study of overseas transport, specifically directed toward the antisubmarine problem."

2078

597
11th from top

Line 11 from top - delete ****'s and after the words of that study. Add: "That was a study on air defense, although a general study of the

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Remarks

air defense, specifically for force of time had to think mostly about defense of continental North America."

597
14th from top

After the word Laboratory. Add: "now a large air defense laboratory in Lincoln, Massachusetts. It is in Lincoln, Lexington and Bedford, Massachusetts."

598
6th from top

Line 6 from top - delete ****'s and after the words controversial thing. Add: "Continental has been to a certain extent controversial. Present national policy on continental defense is especially gratifying to those of us who did work on that study because national policy has turned enough in the direction of making continental defense so that I think it is an important thing to get on the table."

2081

598
23rd from top

After the words was great enough. Add: "whether the United States was indeed capable of making a defense. The question was whether we were capable of making a defense that was worth the effort, worth the making and worth the cost in dollars and men."

2082

598

Delete ****'s above line 14 and insert:

2084 &
2085

"On the first, which was clearest in our minds, and which has been enough in the newspapers so that I can say it, we formulated the technical side of a warning system against aircraft that might be launched from Russia toward the United States. We formulated the technical details and laid plans for a warning system that would be substantially across the top of the world from Hawaii around through the north, back down across to England, and another part down to the Azores.

"There were many people in all branches of the military and civilian life who felt that this was an impractical thing to do, that such a warning system would be too

Remarks

expensive, too monotonous; it would take too many people and too many dollars. It is my feeling that the major role of science in technology is to cut the dollars and men out of the military projects. We cut this by devising new methods which have indeed over the past year and a half been proven technically. We have devised new methods whereby it is economically sound and quite feasible to have such an early warning system. We formulated tentative plans for carrying the air battle out beyond the continental confines of the United States. We formulated plans to try to carry any possible air battle out away from the cities.

"Q. You mean to keep it from getting to the cities?"

"A. To keep it from getting to the cities, but also to keep the battle from going over cities. Air Defense Command is in the United States. We felt that it was very important to learn how to fight an air battle out away from the country in order to pull its sting, in order to reduce it, and possibly to turn it back altogether.

"The last part of that study was devoted to possible intercontinental ballistic missiles, and on these last two things, the remote air battle and missiles, I would like to discuss these things only under military secrecy. The atomic energy secrecy I think would not be importantly involved, although to a certain extent there, too."

598
9th from bottom

After the words emotion in it. Add: "Let me say in direct answer to your question that the national policy apropos of continental defense is quite in keeping with the recommendations that were made by that study. Before the study, they were not."

2085 &
2086

617
12th from top

After the words I won't. Add:

2147

"The purpose of the Vista Project was to investigate methods of tactical warfare, particularly as

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they pertained to the problem of Western Europe. We felt that one of the important ways in which our strength in Western Europe could be bolstered at that time, and in fact one of the things that could really be brought to bear on the problem of keeping to Russians out of Western Europe was the tactical employment of atomic weapons. We felt at that time that we had a sufficient stockpile of atomic weapons that utilization in this field was both possible and appropriate and that it would be a great advantage to our military strength to do this. So recommendations were made in this direction, that the tactical use of atomic weapons be developed and increased, and that a potential in this direction be built up.

"On the question of allocation of weapons to tactical use, I think that this is apt to be somewhat misleading because there existed, or was about to exist -- I am not quite sure of the time scale -- means by which the essential components of the bomb could be made available for one type or another quite readily. I don't believe that is classified."

617
25th from top

After the words through the summer. Add: "and a group of which I was the Chairman, or at least I was responsible for the group, was formed for the employment of atomic weapons."

2148

~~SECRET~~

UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Tuesday, April 27, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Dr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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673
21st from top

After the words atomic warfare. Add: "The
Summer Study Group made recommendations to the
Department of Defense in regard to strengthening
our defenses against air attack."

2327

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Wednesday, April 28, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:45 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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682 21st from top	After the words <u>smaller bombs</u> , delete ****'s and add: "I remember his saying most vigorously that they couldn't make them too big for him."	2350
683 15th from top	After the words <u>same project</u> . Add: "When asked to state how super the Super weapon was, he stated that once the principle is proven, there is no limit to its power."	2353
684	Delete line of ****'s above line 14 from bottom and insert in lieu thereof: (new paragraph) "On technical grounds, Dr. Oppenheimer did not support the full long range detection program of the Air Force. The Air Force had been charged by the Joint Chiefs of Staff with determining the first atomic bomb which might be exploded in Russia."	2359
684 last line	Last line of page -- delete ****'s and after the word <u>projects</u> . Add: "You will note that a ship, even though it is tactically offensive, is strategically defensive, whereas the nuclear powered aircraft is a strategic offensive weapon, and it was one in which the Air Force still places great hopes."	2359 & 2360
695	Delete line of ****'s following line 3 from top and insert in lieu thereof: "THE WITNESS: Technically, sir, I don't feel qualified to answer. But strategically it is a field of tremendous promise, because here is an airplane that can do such things as overfly Russia at local midnight at every point of surface in the land. It can fly at high altitude or low altitude at the same speeds. Things of this sort which are not possible of accomplishment with the present day airplane. These are areas of promise that make it of such importance to the Air Force."	2393

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696
30th from top

After the word start. Add: "For instance, one was the B-36 drone, which is not good. Others were more modern airplanes that were coming up. We even had in the kit a design on paper that was flexible enough to fit almost any weight that we might finally find we had to lift. Specifically studied were the B-47 and the B-52 and then as a very quick short range project, the B-36 as a drone."

2398

697

Immediately following line 29 from top of page delete line of ****'s and insert in lieu thereof:

2401

"Q. Is there any question, General that there are targets in Russia, and that there would be targets in the event of a war with Russia, upon which the thermonuclear weapon should be employed?

"A. Yes, sir.

"Q. Beg pardon?

"A. Yes, sir.

"Q. You say there is question?

"A. No, there is no question. There are targets in Russia against which this weapon should be employed."

722
2nd from top

After the words adequate safeguard. Add: "I believe that this is today even clearer than it was at that time."

2486

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Thursday, April 29, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Dr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

Page and Line No. <u>U.S. GPO copy; 1954</u>	<u>Remarks</u>	Page No. Classified <u>Copy</u>
734 22nd from bottom	After the words <u>mean a great deal</u> . Add: "That time was of the <u>essence in this thing</u> . That we didn't have very much time to cope with this tremendous problem."	2517
734 10th from bottom	After the words <u>in this thing</u> . Add: "even to the point of preventive war."	2518
746 14th from bottom	After <u>tactical warfare</u> . Add: "with particular reference to a possible campaign in Europe."	2558
747	Delete line of ****'s immediately following line 36 from the top of page and insert in lieu thereof: "This was a statement substantially to the effect that it was recommended that the President of the United States announce that the United States would not use its strategic air force in attack on cities or industrial economy, as I recall the statement, until our cities had been attacked. "I regarded this as a very dangerous recommendation and that if it were adopted by the United States at that time -- and my recollection is that it was proposed for immediate adoptment -- that it would have deprived us of the one important military advantage that we had vis a vis the Soviet, except in the case of course in which they attacked our cities as the first act of war. In other words, from where I sat, this recommendation if adopted would have greatly restricted our freedom of action and could have been catastrophic, for instance, in the event of an attack on Europe, which was after all the Vista frame of reference."	2561 & 2562
747	Delete line of ****'s above line 23 from bottom and insert in lieu thereof: "The first was a recommendation that our atomic stockpile -- is somebody checking our security here? "MR. ROLANDER: Yes.	2562

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"THE WITNESS: -- be divided into three parts, that is, three roughly equal parts, one of which would be allocated to the Strategic Air Force, one of which would be allocated to tactical warfare, and the third held in reserve. Who is security monitor here?

"MR. GRAY: Mr. Rolander is the security officer.

"BY MR. ROBB:

"Q. Why did that strike you so forcefully?

"A. At the time this recommendation was made, there was no allocation of the stockpile. We thus had comparative freedom of action to use the stockpile in any way that the Department of Defense and the President saw fit. Had this decision been accepted as in the case of the earlier decision, it would have reduced our freedom of action, would specifically have reduced the ability of SAC."

747
15th from bottom

After the words this second point. Add: "namely, 2563
the suggested tripartite allocation of the stock-
pile."

748
17th from top

After the words Vista Project. Add: "specifically 2565
suggesting ways and means in which thermonuclear
weapons could be useful in a tactical campaign."

748
18th from top

After the words specific problem. Add: "and the 2565
conclusions have not been consistent with that
statement in the Vista Report."

749

Delete line of ****'s above line 19 from bottom and 2570
insert in lieu thereof:

"It was reported to me by people who were asked to join the Lincoln Summer Study that this study was to consider the relative importance of the Strategic Air Command and the Air Defense Command, make recommendations as to budget allocations."

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753
4th from top

After the words we only had. Add: "ten".

2581

759

Delete line of ****'s above line 15 from bottom and insert in lieu thereof:

2604

"Q. Now, as to the point that our atomic stockpile was divided into three roughly equal parts, was that the suggestion or was it rather that the stockpile be thought of as divided?

"A. My recollection is that it was a recommendation that the stockpile be divided into three parts, one of which was to be allocated to strategic use or to use by the Strategic Air Force -- I am not sure which of those statements it was -- and so on.

759

Delete line of ****'s above line 5 from bottom and insert in lieu thereof after the words use of atomic weapons.

2605

"I would add one point while we are on this subject. The reason I am so sure of this is because that was in fact our policy at that time, and the proposal that we divide the stockpile -- and the proposal that we publicly announce that we are not going to use the Strategic Air Force for one use, restricted our flexibility, and therefore was in direct contradiction to the succeeding statement in my estimation.

"Q. Did not the draft ~~make~~ the suggestion that we should have on the shelf enough weapons so that we would be able to use them, either strategically or tactically or whichever way the circumstances might justify?

"A. Yes. This suggestion, I think, was made in the Vista report. It also happened to be Defense Department policy at the time."

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<u>Page and Line No.</u> <u>U.S. GPO copy; 1954</u>	<u>Remarks</u>	<u>Page No.</u> <u>Classified</u> <u>Copy</u>
763 3rd from top	After the words <u>in studies of</u> . Add: "tactical".	2615
764 28th from bottom	After the words <u>air defense</u> . Add: "by the Charles group, the Charles project,"	2620
764 20th from bottom	After the words <u>problem of air defense</u> . Add: "in the 1950-1960 period, or some such thing."	2621
772 3rd from top	After the words <u>would be triggered</u> . Delete the (.) Add: "with the explosion of an ordinary atomic bomb." "Q. When you used the term thermonuclear weapon in that connection, to what sort of a weapon do you refer as to its power? "A. As I remember the discussion, the weapon consisted solely of a deuterium reactor. Perhaps reactor is the wrong word there. I mean a mass of deuterium in which the reaction would take place under the heat of the reaction from the atomic bomb. "MR. ROLANDER: Do you have any problem on classification? "THE WITNESS: I do not think so. Pardon me for suggesting but I do not think it is classified."	2645
772 12th from bottom	After the word <u>Yes</u> . Add: "there was what I was told by its builder was the largest liquid hydrogen plant in the world. I was not at all surprised to find it there because I remembered Dr. Oppenheimer's great interest in the super weapon and knew that in order to make such a weapon work one would need large quantities of liquid deuterium, and this was a plant designed to liquify deuterium."	2648
776 Line 1	After the words <u>tritium was</u> . Add: "the critical."	2659

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Remarks

776
15th from bottom

After the words of free neutrons. Add: "and in order to make these radioactive agents at least a gram of free neutrons per day would be needed. The military could hardly become enthusiastic about a program that could not be initiated unless piles of this type had been built. We felt they appreciated the usefulness of this method of warfare but thought it was so far in the future as not to cause them any immediate concern."

2662

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Friday, April 30, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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Page and Line No.

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Remarks

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797

11th from bottom

After the words be then oriented. Add: "I
had no idea of the fact that this report was
to affect immediate policy."

2723

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Monday, May 3, 1954

The above-entitled matter came on for hearing pursuant to recess before the board, at 2:30 p.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb and C. A. Rolander, Jr., counsel for board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allen B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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Remarks

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850

Delete line of ****'s above line 22 from the bottom of the page and after the words to the consulate. Add: "But isn't it common practice for a Consulate or a Legation to have some espionage attached to them?"

2887

"P. Oh, yes. Military Attaches are really unofficially.

"O: Spies.

"P: That's their business."

860
21st from top

After the words to the consulate. Add: "But isn't it common practice for a Consulate or a Legation to have someone attached to them?"

2919

"P: Oh, yes. Military Attaches are really unofficially."

860
25th from top

After the words attached to the Consulate. Add: "But isn't it common practice for a Consulate or a Legation to have some espionage attached to them?"

2919

"P: Oh, yes. Military Attaches are really unofficially.

"O: Spies.

"P: That's their business."

869
5th from top

After the words to the Consulate. Add: "But isn't it common practice for a Consulate or a Legation to have someone attached to them?"

2929-19

"P: Oh, yes. Military Attaches are really unofficially."

872

Delete line of ****'s at top of page, and after the words final document? Add: (new paragraph)

2999

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Remarks

"A. Not in that form, and the reason should be clear from the testimony we have heard. The suggestion that there might be circumstances under which war would not be initiated by the full all-out Strategic Air Command was very disturbing to people in the Air Force, and many other people as well. It was not directly relevant to the main point we wished to make in this chapter. We therefore rewrote that part of it with a much more detailed listing of target systems in the order of the probable priority of the effect of strikes at them on the outcome of the battle in Europe -- priority simply in time. I believe that the draft which I last saw -- I have had the final report -- discussed the vast industrial target system in these terms, these much more neutral terms, rather than saying there might be circumstances under which they would not be attacked at once."

892
29th from top

After the words formal terms. Add: "He objected to the distinction between tactical and strategic targets. He said at the present time any change in the air plan would certainly be bad, and that this was not an acceptable statement of the case." 3001

899

Delete line of ****'s after line 23 from top; and after the words It was indeed. Add: "I should always work Ulam's name in, but Teller should be in bigger type." 3023

900
5th from bottom

After the words divide it up. Add: "into three parts." 3028

900

Delete line of ****'s at bottom of page and insert in lieu thereof: 3028 & 3029

"We were given an Air Force at that time quite incapable of using atomic weapons tactically."

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Tuesday, May 4, 1954

The above entitled matter came on for hearing before the board, pursuant to recess, at 9:30 a.m.

Personnel Security Board: Dr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb, and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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<u>Page and Line No.</u> <u>U.S. GPO copy; 1954</u>	<u>Remarks</u>	<u>Page No.</u> <u>Classified</u> <u>Copy</u>
923 25th from top	After the words <u>a growing threat</u> . Add: "a threat growing in number of Russian weapons and in the variety of their means of delivery."	3095
924 20th from top	After the words <u>submarine warfare</u> ? Add: "A. The purpose of the summer study was primarily air defense and defense of the continent."	3098
924	Delete line of ****'s after line 24 from top and insert in lieu thereof: "Q. Was there any consideration in the summer study of the problem of defense against missiles launched from submarines? "A. Yes. "Q. Would you tell us about that? "A. Yes, there was. In discussing the various types of missiles, those launched from ground and those launched from ships and those launched from submarines, we went through a certain amount of argument to prove to ourselves that the best defense against submarine launched missiles was an attack against or defense against the submarine itself. We felt that we would not be able to set up a defense against missiles once launched from submarines. That was a more difficult problem than the counter-submarine problem. There was argument with a number of people in the Navy on this very point."	3099
933 3rd from top	After the words <u>Hartwell project the</u> . Add: "anti-submarine".	3128
935 33rd from bottom	After the words <u>in the summer</u> . Add: "and sort of grew into Lincoln."	3137
936	Delete line of ****'s after line 15 from top and after the words <u>Oh, yes</u> . Add: "At one point I believe we stated the purpose was to look at air defense in the era 1954 to 1960."	3139

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Remarks

"Q. What did that mean?

"A. That was the general purpose. It was to try to see what technological and military actions could be taken to face the threat of 1954 to 1960. We felt that the Charles study, of which I was a member, looked more at the immediate things and at only a part of the problem in this time period."

937
3rd from top

After the words be looked at. Add: "such as 3142
early warning and defense against inter-
continental ballistic missiles -- giant rockets --
things of this sort."

~~SECRET~~

UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Wednesday, May 5, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer; Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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Page and Line No.
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Remarks

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950

Delete line of ****'s above line 15 from bottom
and insert in lieu thereof the following:

3177,
3178,
3179, &
3180

"Q. Dr. Alvarez mentioned the expression 'a gram
of neutrons per day' --

"MR. ROBB: How is that?

"MR. SILVERMAN: 'A gram of neutrons per day'.
I think you will find that in his diary.

"MR. ROBB: Do you have the transcript on that?

"MR. SILVERMAN: I have it.

"MR. ROBB: I recall the expression of a gram of
neutrons, but the 'per day' I don't recall.

"MR. GRAY: I think it would be well to indicate
more precisely --

"DR. EVANS: I think he said 'a gram of neutrons
per day.'

"MR. ROBB: May be he did. I don't know. It just
struck me. He may well have said it. I would just
like to be able to look at it.

"MR. GRAY: Let us hold a minute.

"MR. SILVERMAN: I think I can find it, sir.

"On October 9th in the diary. I will say that
there the expression in the diary is just 'gram
of neutrons recommended'.

"MR. ROBB: That is right.

"MR. SILVERMAN: Let us see what the testimony is.

"MR. ROBB: It may well be, Mr. Silverman. I don't know.
What was that date in the diary?

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"MR. SILVERMAN: October 9. Page 2661 of the transcript. It is on page 2662 Dr. Alvarez said, 'People agree that the idea of radio-logical warfare was attractive in many ways, but again the country had no supply of free neutrons and in order to make these radioactive agents, at least a gram of free neutrons per day would be needed. The military could hardly become enthusiastic about a program that could not be initiated unless piles of this type could be built. We felt that they appreciated the usefulness of this method of warfare, but thought it was so far in the future as not to cause them any immediate concern.'

"MR. ROBB: Then I asked the question, 'Gram of neutrons recommended, is there any comment to make about that.'

"Go ahead. I am sorry. I just wanted to get it precisely.

"MR. SILVERMAN: I don't see that it adds any more to the gram per day.

"MR. ROBB: It is all right. It is on the record, anyway.

"MR. SILVERMAN: That refers to the entry in Dr. Alvarez's diary of October 9, 1949.

"BY MR. SILVERMAN:

"Q. Now, as I say, Dr. Alvarez in his testimony used the expression, 'a gram of free neutrons per day', and in his diary he talked something about a gram of neutrons.

"Do you know where that phrase first appeared in the official literature?

"A. I have not read all the official literature. In the summer of 1948 I was Chairman of a panel

of the Committee on Atomic Energy of the Research and Development Board, which met in Berkeley. I think the members of that Board were all military, but we consulted with civil experts. In that report, I for the first time wrote that we needed at least a gram of free neutrons a day, and the facilities for that were required for military purposes. That was the summer of 1948.

"I will not say that no one had written it before. I never saw it before, or heard it before.

"Q. I would like to ask one question off the record because I hate to dispose my ignorance. Is that a lot of neutrons?

"A. By then existing standards it seemed an awful lot of neutrons.

"MR. GRAY: I think it is useful to have it in the record if this point is meaningful.

"MR. SILVERMAN: All right."

951
3rd from bottom

After the words such an opinion. Add: "With one possible exception, and barring tests conducted recently of which I don't know, no United States test of an atomic device has ever failed in the sense that what went on deviated markedly and negatively from theoretical prediction." 3184

952
21st from bottom

After the words extremely depressing. Add: "10-20 per cent." 3186

952
17th from bottom

After the words of the Charles study. Add: "I thought that over the next, say, few years, four years, our defensive capability could and would rise perhaps to the point where 30 or 40 per cent of incoming aircraft would actually be shot down. I thought as enemy capabilities developed, and above all if really long range ballistic rockets, ballistic missiles came into the picture, the picture would get bleak again, and therefore I 3187

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tended to draw on the blackboard a curve which was very low at that time, which rose to a maximum of maybe five or eight years later, and which then fell down again as offensive capabilities increased.

"I had heard enthusiastic tales about early warning and about remote intercept largely from Berkner and through Rabi from Berkner. I thought the views presented were exaggeratedly optimistic with regard to remote interceptor. I had become aware of the importance for air defense, for civil defense, and for SAC for strategic air, of the best early warning we could get.

"I think today I am along with everyone else clear that the early warning problem can be solved in a satisfactory way. I am not clear that remote intercept is a sensible or possible thing."

953
12th from top

After the words use of it. Add: "For eight or nine years the atomic bomb and the planes of the Strategic Air Command, and its base system have been the greatest single component of our military effort, and I think the only offensive component that amounts to anything."

3189

955

Delete line of ****'s below line 17 from top and insert in lieu of the following:

3196

"BY MR. ROBB:

"Q. Do you want to paraphrase that, Doctor?

"A. 'Without the use of fission trigger.'"

957
33rd from top

After the words thermonuclear reactions. Add: "and I paraphrased 'without the use of a fission bomb trigger.'"

3203

~~SECRET~~

UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of J. Robert Oppenheimer

Atomic Energy Commission
Building T-3, Room 2022
Washington, D.C., Thursday, May 6, 1954

The above-entitled matter came on for hearing, pursuant to recess, before the board, at 9:30 a.m.

Personnel Security Board: Mr. Gordon Gray, chairman; Dr. Ward T. Evans, member; and Mr. Thomas A. Morgan, member.

Present: Roger Robb and C. A. Rolander, Jr., counsel for the board; J. Robert Oppenheimer, Lloyd K. Garrison, Samuel J. Silverman, and Allan B. Ecker, counsel for J. Robert Oppenheimer; Herbert S. Marks, cocounsel for J. Robert Oppenheimer.

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No classified deletions were made.

